



*International Civil Aviation Organization*

**ICAO Twenty-Sixth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/26)**

Video Teleconference, 20 – 23 September 2021

---

**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 current expected monitoring burden for the aircraft registered and operated by China and DPR Korea to meet the long term height monitoring requirement. The data were based on the RVSM approval database by the end of Aug, 2021.

**1. INTRODUCTION**

1.1 The Long Term Height Monitoring Impact Statement developed by RASMAG was endorsed by APANPIRG/20 in September 2009. In RASMAG/11 meeting China RMA provided the burden list to the meeting, and this paper is the update for the data.

**2. DISCUSSION**

2.1 In the last version for the monitoring burden list of China RMA, there were 96 operators with 3997 aircraft and the biennial monitoring number is about 556. Because of the rapid development for the Chinese civil aviation, by the end of July, 2021, there were 97 operators with 4090 aircrafts, and the biennial monitoring number is about 630.

2.2 Every year the monitoring plan of China RMA will be published and send to the operators every month. The first time of publishing the plan is confirmed at the beginning of each year and is adjusted in the middle of the year based on the progress.

2.3 Since 2008 China RMA has been using two sets of EGMU and E<sup>2</sup>GMU to conduct on-board monitoring for Chinese Airlines. From 2014, China RMA started to use ADS-B Height Monitoring System (AHMS) for HKP monitoring. With the use of ADS-B ground-based monitoring system, a majority of aircraft of Chinese operators have received successful monitoring records, which obviously reduced the on-board monitoring burden. At the same time, an increasing number of foreign aircraft could also receive valid monitoring records from the ADS-B monitoring system, which helped to support these fleets to meet long-term height monitoring requirement. By July 2021, the team has monitored 24 aircraft from 12 operators with E<sup>2</sup>GMUs, and 3804 aircraft with ADS-B.

2.4 The last monitoring work for Air Koryo was done as early as 2018, this means it exceeds the 2 year requirements. For now, we are reaching Air Koryo to accomplish required monitoring work for the four aircraft, if allowed by the policies from both sides. We will track their operation status before the monitoring is done. The valid monitoring records shared from other RMAs on the KSN are also considered when producing the burden list in this paper.

2.5 **Attachment A** provides details of the monitoring burden based on the minimum monitoring requirements of China RMA.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) review the information provided in the paper and Attachment A; and
- b) use the information to update the current monitoring burden anticipated for the Asia/Pacific RMAs.

.....

**Attachment 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 Sept 2021)**

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
ZB	ALP	Allpoints Jet Co.,Ltd	GLF4	1	1	1	1
			GLF5	1	1	1	1
	BDJ	DEER JET(BEIJING)CO.,LTD	A320	1	2	2	0
			CL605	1	1	1	0
			FA7X	1	3	2	0
			GLF4	1	5	2	0
			GLF5	1	6	2	0
			GLF6	2	5	3	0
	BGC	Good Jet Co., Ltd	CL605	1	1	1	0
	BJN	Beijing Airlines	A320	1	1	1	0
			B737NX	1	4	2	1
			FA7X	1	1	1	0
			GLF5	1	1	1	0
	BNH	Guangzhou Baoneng Business Aviation Co.,Ltd	GLF5	1	1	1	0
	CAO	Air China Cargo	B744-10	1	3	2	0
			B752	1	4	2	0
			B772	1	8	2	0
CBG	Guangxi Beibu Gulf Airlines Co., Ltd.	A320	1	6	2	0	
		A320N	2	4	3	0	

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
	CBJ	Beijing Capital Airlines Co., Ltd.	E170-190	1	11	2	0
			A320	1	68	2	0
			A320N	2	5	3	0
			A330	1	11	2	0
	CBW	SH Bellawings Airlines Limited	CARJ	1	1	1	0
			GLF5	1	1	1	0
	CCA	Air China	A320	1	141	2	0
			A320N	2	38	23	0
			A330	1	59	2	0
			A350	2	13	8	0
			AJ27	2	4	3	2
			B38M	2	13	8	0
			B737NX	1	119	2	0
			B744-10	1	2	2	0
			B744-LCF	2	1	1	0
			B748	1	7	2	0
			B773	1	28	2	0
			B787	1	14	2	0
	CCD	Dalian Airlines	B737NX	1	13	2	0
	CCO	CHINA AIR CARGO CO., LTD	B752	1	1	1	1
	CDC	Zhejiang Loong Airlines Co.,Ltd	A320	1	32	2	0
			A320N	2	22	14	0
			B737CL	1	3	2	0

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
	CDG	Shandong Airlines	B38M	2	7	5	0
			B737NX	1	128	2	0
	CES	China Eastern Airlines	A320	1	295	2	0
			A320N	2	47	29	0
			A330	1	55	2	0
			A350	2	8	5	0
			B737NX	1	72	2	0
			B773	1	20	2	0
	CES-YN	China Eastern Airlines Executive Air	B38M	2	3	2	0
			B737C	1	2	2	0
			B737NX	1	74	2	0
			B787	1	3	2	0
	CFI	Flight Inspection Center of CAAC	C56X	1	13	2	0
			C680	1	3	2	1
			GLF4	1	1	1	1
	CFZ	China Flight General Aviation Co, Ltd	C560	1	1	1	1
	CGH	AIR GUILIN CO.,LTD	A320	1	11	2	0
	CGN	CHANGAN AIRLINES CO.,LTD	B737NX	1	11	2	0
	CGZ	Colorful Guizhou Airlines Company Limited	A320N	2	4	3	1
			E170-190	1	9	2	0
CHB	West Air	A320	1	33	2	0	
		A320N	2	5	3	0	
CHH	Hainan Airlines	A330	1	33	2	0	

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
			A350	2	2	2	0
			B38M	2	11	7	0
			B737NX	1	140	2	0
			B787	1	38	2	0
	CHJ	Star Jet Co., Ltd	GLF4	1	1	1	0
	CJX	Jiangxi Air Co.,Ltd	AJ27	2	4	3	1
			B737NX	1	10	2	0
	CKK	China Cargo Airlines Ltd.	B744-10	1	2	2	0
			B772	1	8	2	0
	CNM	Air China Inner Mongolia Co.,Ltd	B737NX	1	9	2	0
	CNW	Air China Inner Mongolia Co.,Ltd	B737CL	1	1	1	1
	CQH	Spring Airlines	A320	1	80	2	0
			A320N	2	24	15	0
	CQN	Chongqing Airlines	A320	1	18	2	0
			A320N	2	11	7	0
	CSC	Sichuan Airlines	A320	1	130	2	0
			A320N	2	18	11	0
			A330	1	16	2	0
			A350	2	4	3	0
	CSH	Shanghai Airlines	A330	1	1	1	0
			B38M	2	11	7	0
			B737NX	1	76	2	0
			B787	1	7	2	0

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
	CSN	China Southern Airlines	A320	1	297	2	0
			A330	1	45	2	0
			A350	2	8	5	0
			A380	2	5	3	0
			AJ27	2	3	2	2
			B38M	2	17	11	0
			B737NX	1	196	2	0
			B744-10	1	2	2	0
			B772	1	14	2	0
			B773	1	15	2	0
			B787	1	25	2	0
			E170-190	1	2	2	0
	CSS	Shunfeng Airlines	B737CL	1	17	2	2
			B744-10	1	2	2	0
			B752	1	36	2	0
			B767	1	9	2	0
	CSZ	Shenzhen Airlines	A320	1	85	2	0
			A320N	2	18	11	0
			A330	1	6	2	0
			B38M	2	5	3	0
			B737NX	1	83	2	0
		Tianjin Air Cargo Company Limited	B737CL	1	2	2	0
			B737NX	1	2	1	1
CUA	China United Airlines	B737NX	1	53	2	0	

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
	CUH	Urumqi airlines co.,Ltd.	B737NX	1	15	2	0
	CWR	Beijing City International Business Jet Co.,Ltd	FA7X	1	2	2	0
	CXA	Xiamen Airlines	B38M	2	10	6	0
			B737C	1	2	2	0
			B737NX	1	144	2	0
			B787	1	12	2	0
	CYE	ORDOS GENERAL AVIATION CO,LTD	E55P	1	1	1	0
	CYN	Colorful Yunnan General Aviation CO.,LTD	E55P	1	2	2	0
	CYZ	China Postal Airlines	B737CL	1	17	2	0
			B737NX	1	5	2	0
			B752	1	7	2	2
	DER	Shanghai Deer Jet Co.,Ltd	A320	1	1	1	1
			FA7X	1	3	2	0
			G280	2	1	1	0
			GALX	1	1	1	0
			GLF4	1	2	2	0
			GLF5	1	5	2	0
	DKH	Juneyao Airlines	GLF6	2	4	3	0
			A320	1	65	2	0
			A320N	2	9	6	0
	DLC	Dehong South Asian General Aviation Co.,Ltd	B787	1	6	2	0
			B737NX	1	1	1	0

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
	DLJ	Dinglong Business Aviation Co., LTD	CL600	1	1	1	0
	EPA	Donghai Airlines	B737NX	1	23	2	0
	EPB	Donghai Jet Co. Ltd	BD100	1	2	2	0
			CL600	1	2	2	0
			HDJT	2	1	1	1
	FJT	Future Air Co.,Ltd	E135-145	1	1	1	0
	FZA	FUZHOU AIRLINES CO.,LTD	B38M	2	2	2	0
			B737NX	1	14	2	0
	GCR	Tianjin Airlines	A320	1	31	2	0
			A320N	2	4	3	1
			A330	1	6	2	0
			E170-190	1	48	2	0
	GDC	Grand China Airlines	B737NX	1	3	2	0
	HAH	Hanhwa Business Jet Airlines Co.,Ltd	BD100	1	1	1	0
	HBH	Hebei Airlines	B737NX	1	22	2	0
			E170-190	1	6	2	0
	HFJ	YIFENG BUSINESS JET CO.,LTD	CL605	1	1	1	0
	HHG	Hanergy Jet CO.,LTD	GLF5	1	2	2	0
	HLF	Central Airlines CO., LTD	B737CL	1	3	2	2
	HNJ	China Southern Jet Co., LTD	GLEX	1	1	1	0
	HXA	China Express Air	A320	1	11	2	0
			A320N	2	3	2	1

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
			AJ27	2	2	2	2
			CRJ9	1	38	2	0
	HYN	Shenzhen Funian Business Aviation Co.,Ltd	GLF4	1	2	2	0
	HYT	YTO CARGO AIRLINES CO., LTD.	B737CL	1	4	2	2
			B752	1	5	2	0
	ICU	Reignwood Asia Aviation Co., Ltd	G280	2	1	1	0
			LJ60	1	1	1	1
	IGA-CG	Shanxi Victory General Aviation Co.,Ltd.	C56X	1	1	1	1
	JBE	Sinojet(Beijing)Co.,Ltd	CL605	1	1	1	0
			E135-145	1	4	2	0
			FA7X	1	2	2	0
			G280	2	2	2	0
			GALX	1	2	2	1
			GLF4	1	1	1	0
			GLF5	1	2	2	0
	JGJ	JINGGONG GLOBALJET (ZHEJIANG) JET CO., LTD.	F2TH	2	1	1	0
			FA7X	1	1	1	1
	JOY	JOYAIR	B737NX	1	3	2	1
	JSU	JIANGSU JET CO.,LTD	CARJ	1	4	2	1
	JYH	9 Air Company Limited.	B38M	2	1	1	0
B737NX			1	20	2	0	

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
	KNA	Kunming Airlines	B38M	2	2	2	0
			B737NX	1	29	2	0
	LHA	China Central Longhao Airlines Co., Ltd.	B737CL	1	6	2	0
			B737NX	1	2	2	2
	LKE	Lucky Air	A320	1	8	2	0
			A320N	2	6	4	0
			A330	1	5	2	0
			B38M	2	3	2	0
			B737NX	1	31	2	0
	LLJ	Beijing Mayboune General Aviation Co.,LTD	GALX	1	2	2	2
	LNM	LIAONING MERIDIAN JET CO.,LTD	CL600	1	2	2	0
	MJC	Mandarin Air Co.,Ltd	G280	2	1	1	0
			GLF4	1	1	1	0
			GLF5	1	2	2	0
			GLF6	2	1	1	0
	MZT	ZYB Lily Jet	CARJ	1	5	2	0
			CL604	1	2	2	0
			G280	2	1	1	0
			GL5T	1	1	1	0
			GL7T	2	1	1	0
			GLEX	1	5	2	0
GLF6			2	1	1	0	

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
	NMG	Genghis Khan Airlines Co.,Ltd	AJ27	2	4	3	0
	NSJ	Nanshan Jet Co.,Ltd	F2TH	2	1	1	0
			GLF4	1	2	2	0
			GLF5	1	3	2	0
	OKA	Okay Airway Ltd.	B38M	2	2	2	2
			B737CL	1	1	1	1
			B737NX	1	27	2	0
	OTC	AIR TRAVEL CO., LTD	A320	1	9	2	0
			A320N	2	5	3	0
	OTT	OTT Airlines Co.,Ltd	AJ27	2	3	2	2
			BD100	1	1	1	0
			E135-145	1	3	2	0
			G280	2	1	1	0
			GLF5	1	3	2	0
			GLF6	2	1	1	0
	QDA	QINGDAO AIRLINES CO.,LTD	A320	1	14	2	0
			A320N	2	14	9	0
	RLH	Ruili Airkines Company Limited	B737NX	1	20	2	0
	SAJ	Saint Jet Co., Ltd	C56X	1	2	2	1
	SNG	Longjiang Airlines Co.,Ltd.	A320	1	4	2	0
	STJ	EMPER GENERAL AVIATION (SUZHOU) CO., LTD.	C680	1	2	2	0
	SZA		CARJ	1	2	2	0

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
		SHENZHEN ASTRO GENERAL AVIATION CO.,LTD	GALX	1	1	1	1
			GLF4	1	2	2	0
			H25B-800	1	1	1	1
	TBA	Tibetan Airlines	A320	1	32	2	0
			A330	1	5	2	0
	TCI	Amber Aviation Limited	CL605	1	1	1	0
			F900	1	1	1	0
			GLEX	1	1	1	0
			GLF4	1	1	1	0
			LJ60	1	1	1	1
	TXJ	Brilliant Jet Co.Ltd	FA7X	1	1	1	0
			GLF4	1	1	1	1
			GLF5	1	4	2	0
			GLF6	2	1	1	0
	UEA	Chengdu Airlines Co., Ltd.	A320	1	38	2	0
			AJ27	2	24	15	0
	UNA	Business Aviation Asia Ltd.	A318	1	2	2	0
			CARJ	1	1	1	0
			FA7X	1	6	2	0
			GL5T	1	1	1	0
			GLEX	1	2	2	0
GLF4			1	3	2	0	
GLF5			1	4	2	0	
GLF6	2	3	2	0			

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
	UTP	Uni-top Airlines	A300	1	6	2	0
	WFH	WanFeng General Aviation Co.,Ltd	CL605	1	1	1	0
	XAI	Apex Air Co., Ltd	CARJ	1	4	2	0
	YZR	Yangze River Express Airlines	B737CL	1	7	2	0
			B737NX	1	9	2	0
			B744-10	1	3	2	0
			B744-5	1	1	1	1
			B787	1	2	2	0
<b>Total China</b>					<b>4086</b>	<b>626</b>	<b>51</b>

Responsible State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category (1, 2 or 3)	Total Aircraft Type Count	Resultant Monitoring Burden (# Airframes)	Remaining # of Monitoring
<b>DPRK</b>	KOR	Air Koryo	A148	2	2	2	2
			T204	2	2	2	2
<b>Total DPRK</b>					<b>4</b>	<b>4</b>	<b>4</b>

<b>China RMA Grand Total (China + DPRK)</b>	<b>Total Aircraft Type Count</b>	<b>Resultant Monitoring Burden</b>	<b>Remaining # of Monitoring</b>
---	----------------------------------	------------------------------------	----------------------------------

	4090	630	55