



*International Civil Aviation Organization*

**The Twenty-Second Meeting of the Regional Airspace Safety Monitoring  
Advisory Group (RASMAG/22)**

Bangkok, Thailand, 10-13 July 2017

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**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 May, 2017.

**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 77 operators with 2860 aircraft and the biennial monitoring number is about 311. Because of the rapid development for the Chinese civil aviation, by the end of May, 2017, there were 78 operators with 3209 aircrafts.

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 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.

2.4 The valid monitoring records shared from other RMAs on the KSN are also considered when producing the burden list in this paper.

2.5 For the Democratic People's Republic of Korea (DPRK), there are 4 aircraft and the biennial monitoring number is 4, which is included in the monitoring plan for the second half of 2017.

2.6 **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 May 2017)**

Responsible State	Operator	OperatorName	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
China	APJ	Allpoints Jet Co.,Ltd	GLF4	1	1	1	1
	APJ	Allpoints Jet Co.,Ltd	GLF5	1	2	2	0
	BDJ	DEER JET(BEIJING)CO.,LTD	A320	1	2	2	0
	BDJ	DEER JET(BEIJING)CO.,LTD	B737NX	1	2	2	0
	BDJ	DEER JET(BEIJING)CO.,LTD	CL605	1	1	1	0
	BDJ	DEER JET(BEIJING)CO.,LTD	FA7X	1	2	2	0
	BDJ	DEER JET(BEIJING)CO.,LTD	GLF4	1	6	2	0
	BDJ	DEER JET(BEIJING)CO.,LTD	GLF5	1	14	2	0
	BDJ	DEER JET(BEIJING)CO.,LTD	HA4T	2	1	1	0
	BGC	Good Jet Co., Ltd	CL605	1	1	1	0
	BGC	Good Jet Co., Ltd	GLF4	1	1	1	0
	BJN	Beijing Airlines	A320	1	1	1	0
	BJN	Beijing Airlines	B737NX	1	1	1	0
	BJN	Beijing Airlines	F2TH	2	1	1	0
	BJN	Beijing Airlines	FA7X	1	2	2	0
	BJN	Beijing Airlines	GLF4	1	1	1	0
	BJN	Beijing Airlines	GLF5	1	1	1	0
	CAO	Air China Cargo	B744-10	1	3	2	0
	CAO	Air China Cargo	B752	1	4	2	2
	CAO	Air China Cargo	B772	1	8	2	0

Responsible State	Operator	OperatorName	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
China	CBG	Guangxi Beibu Gulf Airlines Co., Ltd.	A320	1	3	2	2
	CBG	Guangxi Beibu Gulf Airlines Co., Ltd.	E170-190	1	15	2	2
	CBJ	Beijing Capital Airlines Co., Ltd.	A320	1	65	2	0
	CBJ	Beijing Capital Airlines Co., Ltd.	A330	1	6	2	0
	CCA	Air China	A320	1	136	2	0
	CCA	Air China	A330	1	55	2	0
	CCA	Air China	B737NX	1	144	2	0
	CCA	Air China	B744-10	1	2	2	0
	CCA	Air China	B744-LCF	2	2	2	0
	CCA	Air China	B748	2	7	5	0
	CCA	Air China	B772	1	6	2	0
	CCA	Air China	B773	1	23	2	0
	CCA	Air China	B787	2	8	5	0
	CCD	Dalian Airlines	B737NX	1	10	2	0
	CDC	Zhejiang Loong Airlines Co.,Ltd	A320	1	19	2	0
	CDC	Zhejiang Loong Airlines Co.,Ltd	B737CL	1	3	2	3
	CDG	Shandong Airlines	B737NX	1	105	2	0
	CDG	Shandong Airlines	CRJ7	1	2	2	2
	CES	China Eastern Airlines	A320	1	273	2	0
	CES	China Eastern Airlines	A330	1	42	2	0
CES	China Eastern Airlines	B737NX	1	53	2	0	
CES	China Eastern Airlines	B773	1	17	2	0	

Responsible State	Operator	OperatorName	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
China	CES-IGA	China Eastern Airlines Excecutive Air	A318	1	1	1	0
	CES-IGA	China Eastern Airlines Excecutive Air	BD100	1	1	1	0
	CES-IGA	China Eastern Airlines Excecutive Air	E135-145	1	5	2	0
	CES-IGA	China Eastern Airlines Excecutive Air	GALX	1	1	1	0
	CES-IGA	China Eastern Airlines Excecutive Air	GLF4	1	1	1	0
	CES-IGA	China Eastern Airlines Excecutive Air	GLF5	1	3	2	0
	CES-IGA	China Eastern Airlines Excecutive Air	H25B-800	1	1	1	0
	CES-YN	China Eastern YunNan Airlines	A330	1	3	2	0
	CES-YN	China Eastern YunNan Airlines	B737NX	1	73	2	0
	CFI	Flight Inspection Center of CAAC	C56X	1	5	2	2
	CFI	Flight Inspection Center of CAAC	C680	1	3	2	2
	CFI	Flight Inspection Center of CAAC	C750	1	1	1	0
	CFI	Flight Inspection Center of CAAC	GLF4	1	1	1	1
	CGH	AIR GUILIN CO.,LTD	A320	1	3	2	0
	CGN	CHANGAN AIRLINES CO.,LTD	B737NX	1	5	2	0
	CGZ	Colorful Guizhou Airlines Company Limited	E170-190	1	6	2	2
	CHB	West Air	A320	1	27	2	0
	CHH	Hainan Airlines	A330	1	23	2	0
	CHH	Hainan Airlines	B737NX	1	138	2	0
	CHH	Hainan Airlines	B767	1	3	2	2
CHH	Hainan Airlines	B787	2	19	12	0	
CHJ	Star Jet Co., Ltd	C560	1	1	1	0	

Responsible State	Operator	OperatorName	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
China	CHJ	Star Jet Co., Ltd	GALX	1	1	1	1
	CHJ	Star Jet Co., Ltd	GLF5	1	1	1	0
	CJX	Jiangxi Air Co.,Ltd	B737NX	1	5	2	0
	CKK	China Cargo Airlines Ltd.	B744-10	1	3	2	0
	CKK	China Cargo Airlines Ltd.	B772	1	6	2	0
	CNM	Air China Inner Mongolia Co.,Ltd	B737NX	1	3	2	2
	CQH	Spring Airlines	A320	1	68	2	0
	CQN	Chongqing Airlines	A320	1	15	2	0
	CSC	Sichuan Airlines	A320	1	113	2	0
	CSC	Sichuan Airlines	A330	1	10	2	0
	CSH	Shanghai Airlines	A330	1	6	2	0
	CSH	Shanghai Airlines	B737NX	1	75	2	0
	CSH	Shanghai Airlines	B767	1	6	2	0
	CSN	China Southern Airlines	A320	1	253	2	0
	CSN	China Southern Airlines	A330	1	39	2	0
	CSN	China Southern Airlines	A380	2	5	3	0
	CSN	China Southern Airlines	B737CL	1	3	2	0
	CSN	China Southern Airlines	B737NX	1	166	2	0
	CSN	China Southern Airlines	B744-10	1	2	2	0
	CSN	China Southern Airlines	B752	1	6	2	2
CSN	China Southern Airlines	B772	1	14	2	0	
CSN	China Southern Airlines	B773	1	10	2	0	

Responsible State	Operator	OperatorName	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
China	CSN	China Southern Airlines	B787	2	10	6	0
	CSN	China Southern Airlines	E170-190	1	21	2	0
	CSS	Shunfeng Airlines	B737CL	1	17	2	2
	CSS	Shunfeng Airlines	B752	1	17	2	1
	CSS	Shunfeng Airlines	B767	1	5	2	2
	CSZ	Shenzhen Airlines	A320	1	85	2	0
	CSZ	Shenzhen Airlines	B737NX	1	87	2	0
	CUA	China United Airlines	B737NX	1	33	2	0
	CUH	Urumqi airlines co.,ltd.	B737NX	1	9	2	4
	CWR	Beijing City International Business Jet Co.,Ltd	FA7X	1	2	2	0
	CXA	Xiamen Airlines	B737NX	1	138	2	0
	CXA	Xiamen Airlines	B752	1	4	2	2
	CXA	Xiamen Airlines	B787	2	9	6	0
	CYZ	China Postal Airlines	B737CL	1	22	2	2
	CYZ	China Postal Airlines	B752	1	3	2	0
	DKH	Juneyao Airlines	F2TH	2	1	1	0
	DKH	Juneyao Airlines	FA7X	1	2	2	1
	DKH	Juneyao Airlines	G280	2	1	1	0
	DKH	Juneyao Airlines	GALX	1	3	2	0
	DKH	Juneyao Airlines	GLF4	1	6	2	0
DKH	Juneyao Airlines	GLF5	1	4	2	0	
DKH	Juneyao Airlines	H25B-800	1	2	2	0	

Responsible State	Operator	OperatorName	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
China	DKH	Juneyao Airlines	A320	1	62	2	0
	DLC	Dehong South Asian General Aviation Co.,Ltd	B737NX	1	1	1	0
	EPA	Donghai Airlines	B737NX	1	13	2	0
	EPB	Donghai Jet Co. Ltd	BD100	1	2	2	1
	EPB	Donghai Jet Co. Ltd	CL600	1	2	2	0
	FSJ	Free Sky Aviation Co.,Ltd	CARJ	1	2	2	1
	FSJ	Free Sky Aviation Co.,Ltd	P180	2	2	2	0
	FZA	FUZHOU AIRLINES CO.,LTD	B737NX	1	11	2	0
	GCR	Tianjin Airlines	A320	1	23	2	0
	GCR	Tianjin Airlines	A330	1	3	2	0
	GCR	Tianjin Airlines	E135-145	1	16	2	1
	GCR	Tianjin Airlines	E170-190	1	45	2	2
	GDC	Grand China Airlines	B737NX	1	3	2	0
	HAH	Hanhwa Business Jet Airlines Co.,Ltd	BD100	1	2	2	1
	HBH	Hebei Airlines	B737NX	1	12	2	0
	HBH	Hebei Airlines	E170-190	1	6	2	2
	HFJ	YIFENG BUSINESS JET CO.,LTD	CL605	1	1	1	0
	HHG	Hanergy Jet CO.,LTD	GLF5	1	4	2	0
	HTU	YUNNAN HONGTU AIRLINES CO.,LTD.	A320	1	3	2	2
	HXA	China Express Air	CRJ9	1	30	2	2
HYT	YTO CARGO AIRLINES CO., LTD.	B737CL	1	5	2	2	
ICU	Reignwood Asia Aviation Co., Ltd	LJ60	1	2	2	0	



Responsible State	Operator	OperatorName	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
China	JBE	Sinojet(Beijing)Co.,Ltd	CL605	1	1	1	0
	JBE	Sinojet(Beijing)Co.,Ltd	E135-145	1	3	2	0
	JBE	Sinojet(Beijing)Co.,Ltd	GLF4	1	1	1	0
	JBE	Sinojet(Beijing)Co.,Ltd	GLF5	1	1	1	0
	JGJ	JINGGONG GLOBALJET (ZHEJIANG) JET CO., LTD.	F2TH	2	1	1	0
	JGJ	JINGGONG GLOBALJET (ZHEJIANG) JET CO., LTD.	FA7X	1	1	1	0
	JSU	JIANGSU JET CO.,LTD	CARJ	1	2	2	0
	JYH	9 Air Company Limited.	B737NX	1	11	2	0
	KNA	Kunming Airlines	B737NX	1	19	2	0
	LHA	Guangdong Longhao Airlines Co., Ltd.	B737CL	1	1	1	0
	LKE	Lucky Air	A320	1	11	2	0
	LKE	Lucky Air	B737NX	1	28	2	0
	LLJ	Beijing Mayboune General Aviation Co.,LTD	GALX	1	2	2	1
	MJC	Mandarin Air Co.,Ltd	G280	2	2	2	0
	MJC	Mandarin Air Co.,Ltd	GLF4	1	2	2	0
	MJC	Mandarin Air Co.,Ltd	GLF5	1	1	1	0
	MZT	ZYB Lily Jet	BD700	2	1	1	0
	MZT	ZYB Lily Jet	CARJ	1	4	2	2
	MZT	ZYB Lily Jet	CL604	1	2	2	1
	MZT	ZYB Lily Jet	CL605	1	1	1	0
MZT	ZYB Lily Jet	GALX	1	1	1	1	
MZT	ZYB Lily Jet	GLEX	1	2	2	0	

Responsible State	Operator	OperatorName	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
China	NSJ	Nanshan Jet Co.,Ltd	B737CL	1	1	1	0
	NSJ	Nanshan Jet Co.,Ltd	GLF4	1	4	2	0
	NSJ	Nanshan Jet Co.,Ltd	GLF5	1	2	2	0
	OKA	Okay Airway Ltd.	B737CL	1	1	1	1
	OKA	Okay Airway Ltd.	B737NX	1	21	2	0
	QDA	QINGDAO AIRLINES CO.,LTD	A320	1	12	2	1
	QSR	Sparkel Roll Jet Co.,Ltd.	CARJ	1	2	2	1
	QSR	Sparkel Roll Jet Co.,Ltd.	CL600	1	2	2	0
	QSR	Sparkel Roll Jet Co.,Ltd.	E170-190	1	2	2	0
	QSR	Sparkel Roll Jet Co.,Ltd.	E545-550	2	1	1	0
	QSR	Sparkel Roll Jet Co.,Ltd.	P180	2	2	2	0
	RLH	Ruili Airkines Company Limited	B737NX	1	11	2	0
	SNG	Longjiang Airlines Co.,Ltd.	A320	1	1	1	0
	SZA	SHENZHEN ASTRO GENERAL AVIATION CO.,LTD	CL600	1	1	1	0
	SZA	SHENZHEN ASTRO GENERAL AVIATION CO.,LTD	GLF4	1	1	1	0
	SZA	SHENZHEN ASTRO GENERAL AVIATION CO.,LTD	H25B-800	1	1	1	0
	TBA	Tibetan Airlines	A320	1	18	2	0
	TBA	Tibetan Airlines	A330	1	2	2	0
	TXJ	Brilliant Jet Co.Ltd	E135-145	1	1	1	0
	TXJ	Brilliant Jet Co.Ltd	FA7X	1	1	1	0
TXJ	Brilliant Jet Co.Ltd	GLF4	1	1	1	0	
TXJ	Brilliant Jet Co.Ltd	GLF5	1	1	1	0	

Responsible State	Operator	OperatorName	Aircraft Monitoring Group	MMR Category	Total Approved Airframes	Resultant Monitoring Burden (#Airframes)	Remaining # of Monitoring
China	UEA	Chengdu Airlines Co., Ltd.	A320	1	26	2	0
	UEA	Chengdu Airlines Co., Ltd.	AJ27	2	2	2	1
	UNA	Business Aviation Asia Ltd.	A318	1	1	1	0
	UNA	Business Aviation Asia Ltd.	A320	1	1	1	0
	UNA	Business Aviation Asia Ltd.	C525	1	1	1	0
	UNA	Business Aviation Asia Ltd.	CARJ	1	2	2	0
	UNA	Business Aviation Asia Ltd.	CL605	1	2	2	0
	UNA	Business Aviation Asia Ltd.	E135-145	1	2	2	0
	UNA	Business Aviation Asia Ltd.	F900	1	1	1	0
	UNA	Business Aviation Asia Ltd.	FA7X	1	5	2	0
	UNA	Business Aviation Asia Ltd.	G280	2	1	1	0
	UNA	Business Aviation Asia Ltd.	GLEX	1	2	2	0
	UNA	Business Aviation Asia Ltd.	GLF4	1	7	2	0
	UNA	Business Aviation Asia Ltd.	GLF5	1	5	2	0
	UNA	Business Aviation Asia Ltd.	LJ60	1	1	1	0
	UTP	Uni-top Airlines	A300	1	3	2	0
	UTP	Uni-top Airlines	B747CL	1	2	2	0
	WFH	WanFeng General Aviation Co.,Ltd	CL605	1	1	1	0
	WFH	WanFeng General Aviation Co.,Ltd	E50P	1	1	1	0
	WFH	WanFeng General Aviation Co.,Ltd	GLEX	1	1	1	0
XAI	Apex Air Co., Ltd	CARJ	1	2	2	1	
YZR	Yangze River Express Airlines	B737CL	1	13	2	2	

<b>Responsible State</b>	<b>Operator</b>	<b>OperatorName</b>	<b>Aircraft Monitoring Group</b>	<b>MMR Category</b>	<b>Total Approved Airframes</b>	<b>Resultant Monitoring Burden (#Airframes)</b>	<b>Remaining # of Monitoring</b>
<b>China</b>	YZR	Yangze River Express Airlines	B737NX	1	6	2	2
	YZR	Yangze River Express Airlines	B744-10	1	2	2	0
	YZR	Yangze River Express Airlines	B744-5	1	1	1	0
<b>Total China</b>					<b>3194</b>	<b>368</b>	<b>68</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
DPRK	KOR	Air Koryo	A148	2	2	2	0
			T204	2	2	2	0
<b>Total DPRK</b>					<b>4</b>	<b>4</b>	<b>0</b>

China RMA Grand Total (China + DPRK)	Total Aircraft Type Count	Resultant Monitoring Burden	Remaining # of Monitoring
	<b>3198</b>	<b>372</b>	<b>72</b>