



International Civil Aviation Organization

**The Nineteenth Meeting of the Regional Airspace Safety Monitoring
Advisory Group (RASMAG/19)**

Pattaya, Thailand, 27-30 May 2014

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

LATEST MONITORING RESULTS OF SETOUCHI HMU

(Presented by JASMA)

SUMMARY

This paper presents a summary of the latest height monitoring results obtained from Setouchi height monitoring unit (HMU).

1. INTRODUCTION

1.1 This paper presents a summary of the latest height monitoring results obtained from Setouchi HMU for the period between 16 June 2013 and 15 April 2014. JASMA conducts careful verification including monitoring flight information over Setouchi HMU to updating the RMA's (KSN) Knowledge Sharing Network website and Japan Airspace Safety Monitoring Agency (JASMA) website. JASMA uploaded monthly the monitoring date, registration number and Mode S code which were successful height monitored results in KSN and JASMA website. It should be noted that the period of data of each months are from day 16th to 15th, which is as same as the period of upload data to the KSN site and due to technical reasons, there were some discontinuities in the data stream between 5 and 11 December 2013.

2. DISCUSSION

2.1 **Table 1** and **Figure 1** shows the TVE trend of Setouchi HMU between 16 June 2013 and 15 April 2014. The average of mean TVE is 16.0 ft and the average of standard deviation of TVE is 62.0 during this period.

2.2 **Figure 2** shows the proportion of monitoring groups monitored by Setouchi HMU between 16 June 2013 and 15 April 2014. The top eleven of the monitoring groups are B737NX, A320, B772, B767, B737CL, E170-190, B787, B773, B744-10, A330 and MD11 in this period. The proportion of B737NX, A320, B772 and B767 are continuously large amount as previous report.

Table 1: TVE trend between June 2013 and April 2014

	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Mean
TVE	22.7	7.5	15.3	9.3	24.5	13.7	15.3	16.7	4.6	29.9	16.0
SD	58.3	56.3	59.2	57.1	64.0	66.2	68.3	69.9	61.7	58.5	62.0

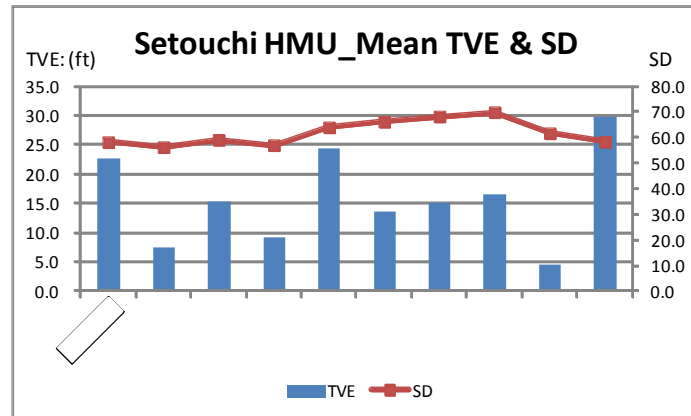


Figure 1: TVE trend between 16 June 2013 and 15 April 2014

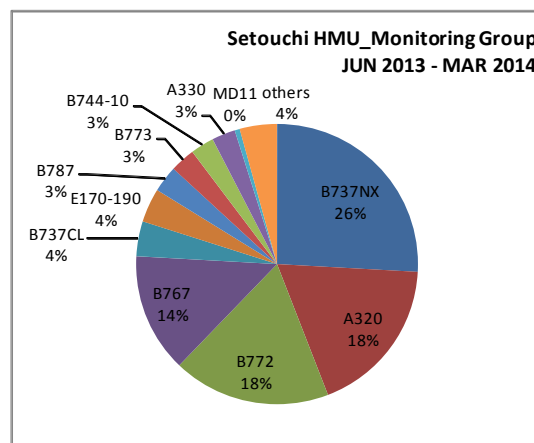


Figure 2: Percentage of Aircraft monitoring group monitored by Setouchi HMU

2.10 **Table 2** shows the mean TVE, AAD, ASE and ASE+3SD of top 11 monitoring groups for the same period. The value of the monitoring group B744-10 ASE + 3SD is exceeded absolute 245ft which is the height keeping requirement. **Figure 3** draws focus to the data of mean ASE of each monitoring group and made it a bar graph and a monthly line graph shown in **Figure 4**. The details of each monitoring groups are shown in **Appendix A** in descending order of ASE.

Table 2: Result of recent height monitoring per monitoring groups

Monitoring Group	count	Mean (ft)			ASE+3SD (ft)
		TVE	AAD	ASE	
A330	3152	69.5	0.0	69.5	218.3
A320	21412	71.0	1.5	69.4	216.6
E170-190	4600	44.4	-0.1	44.5	198.2
B787	3565	38.9	-0.4	39.3	159.4
B772	21204	34.6	-0.2	34.8	171.2
B773	3369	29.6	0.0	29.6	164.4
MD11	693	26.4	11.2	15.3	199.5
B737NX	31789	15.4	-0.2	15.6	141.0
B767	16093	-43.2	0.2	-43.3	209.5
B737CL	4725	-44.9	0.0	-44.9	215.3
B744-10	3164	-74.3	-0.1	-74.2	258.6

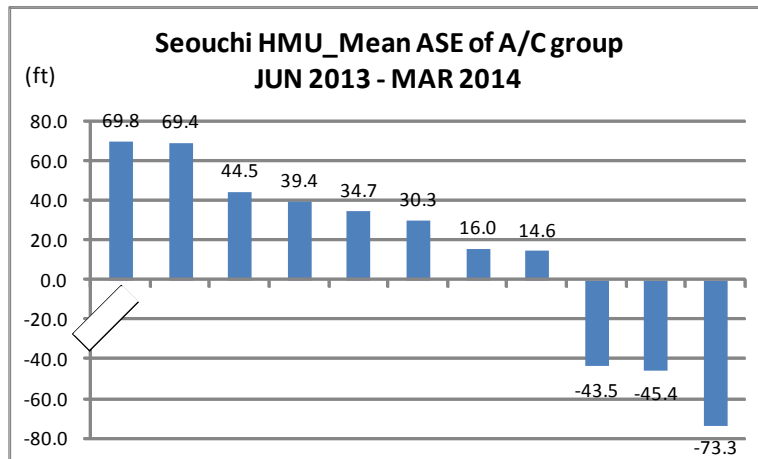


Figure 3: Mean ASE of each Monitoring Group

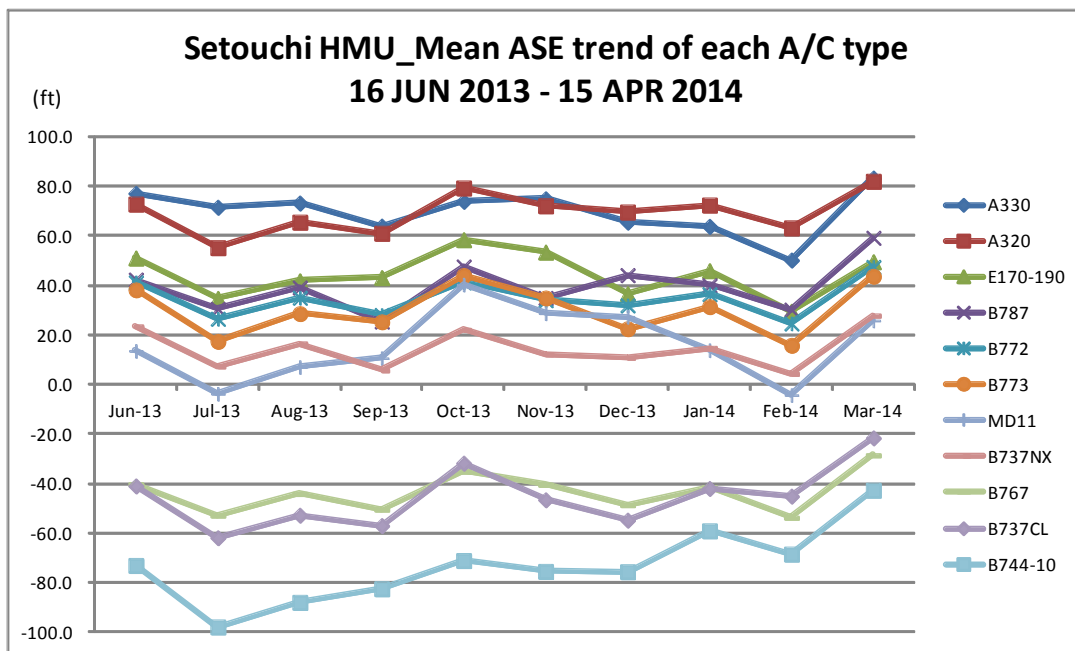


Figure 4: Monthly Mean ASE of each Monitoring Group

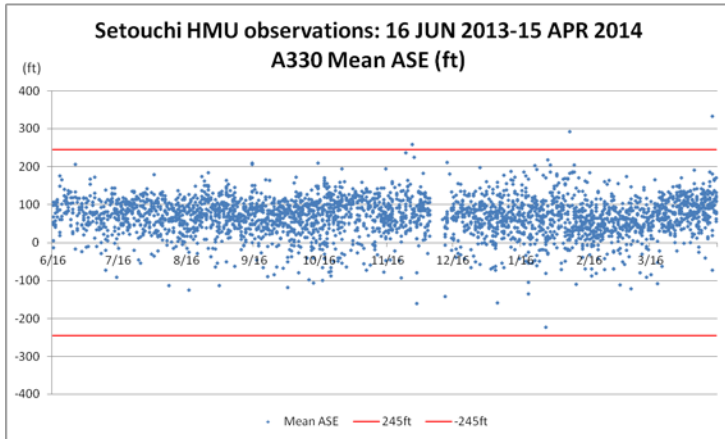
2.11 Seasonal variation is not clear but the characteristics of each monitoring groups is clear. JASMA continue to provide the monitoring results periodically.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

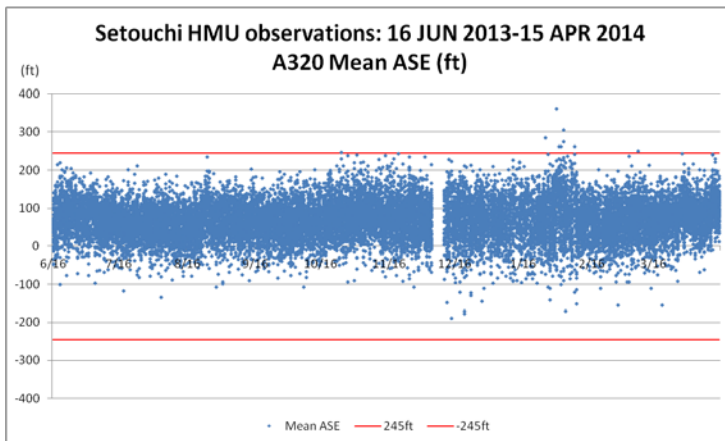
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Appendix A: TVE, AAD and ASE trend of each aircraft type
(Discontinuities in the data stream between 5 and 11 December 2013.)



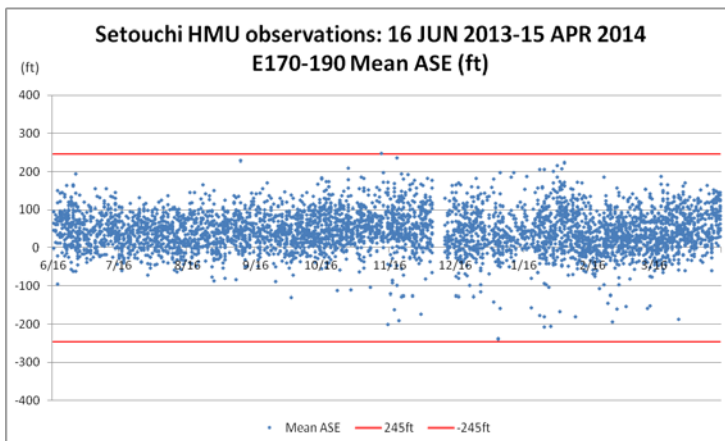
A330

A330	TVE	AAD	ASE
AVE	69.5	0.0	69.5
SD	49.6	1.8	49.6
MAX	332.0	88.8	332.0
MIN	-222.7	-9.2	-222.7
Count	3152	ASE+3SD	218.3



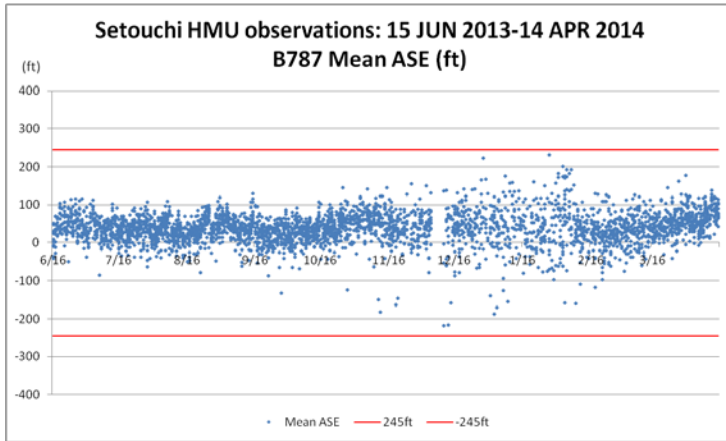
A320

A320	TVE	AAD	ASE
AVE	71.0	1.5	69.4
SD	49.1	5.9	49.1
MAX	359.0	89.3	362.0
MIN	-187.7	-66.0	-187.7
Count	21412	ASE+3SD	216.6



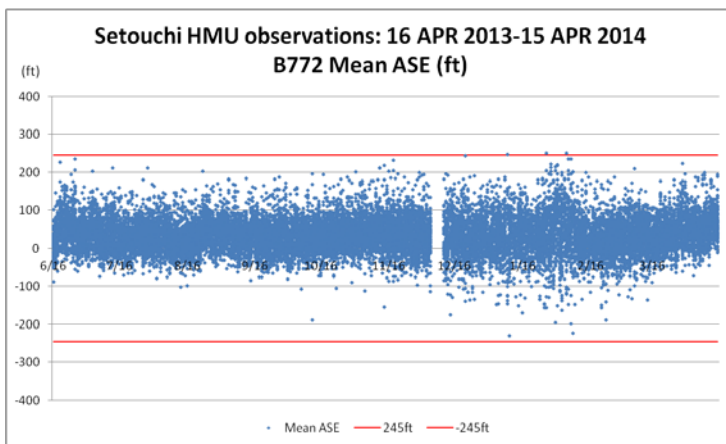
E170-190

E170-190	TVE	AAD	ASE
AVE	44.4	-0.1	44.5
SD	51.3	2.1	51.2
MAX	248.3	100.0	248.3
MIN	-237.7	-12.7	-237.7
Count	4600	ASE+3SD	198.2



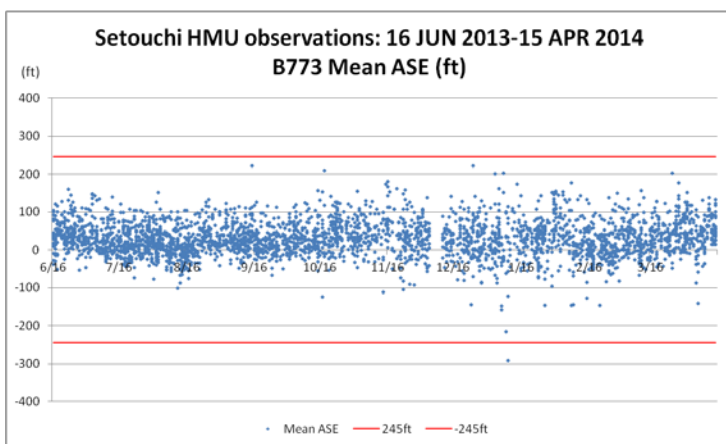
B787

B787	TVE	AAD	ASE
AVE	38.9	-0.4	39.3
SD	40.2	1.2	40.0
MAX	232.4	5.9	232.4
MIN	-218.9	-12.7	-217.7
Count	3565	ASE+3SD	159.4



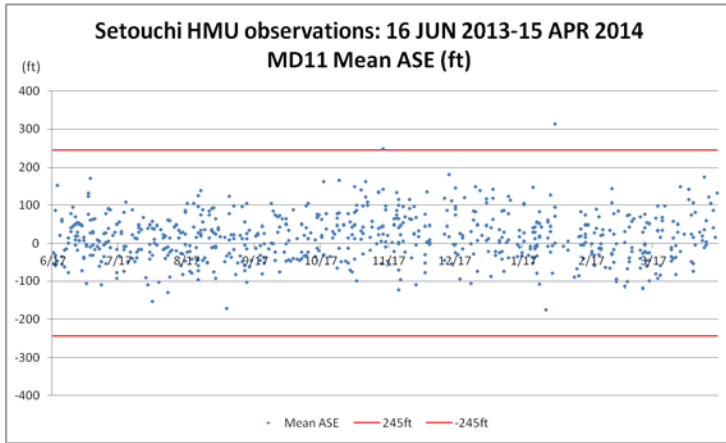
B772

B772	TVE	AAD	ASE
AVE	34.6	-0.2	34.8
SD	45.5	1.1	45.5
MAX	250.0	13.2	250.0
MIN	-232.4	-68.5	-230.8
Count	21204	ASE+3SD	171.2



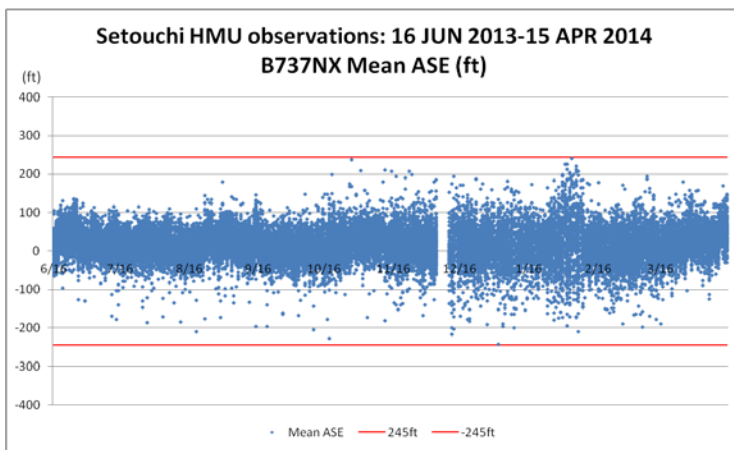
B773

B773	TVE	AAD	ASE
AVE	29.6	0.0	29.6
SD	44.9	0.7	44.9
MAX	221.2	6.5	221.2
MIN	-291.2	-7.8	-291.2
Count	3369	ASE+3SD	164.4



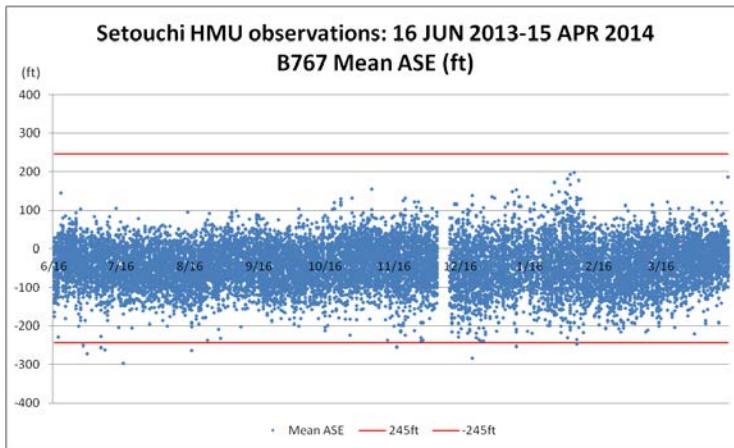
MD11	TVE	AAD	ASE
AVE	26.4	11.2	15.3
SD	59.7	16.0	61.4
MAX	311.0	64.9	313.8
MIN	-175.5	-39.8	-175.5
Count	693	ASE+3SD	199.5

MD11



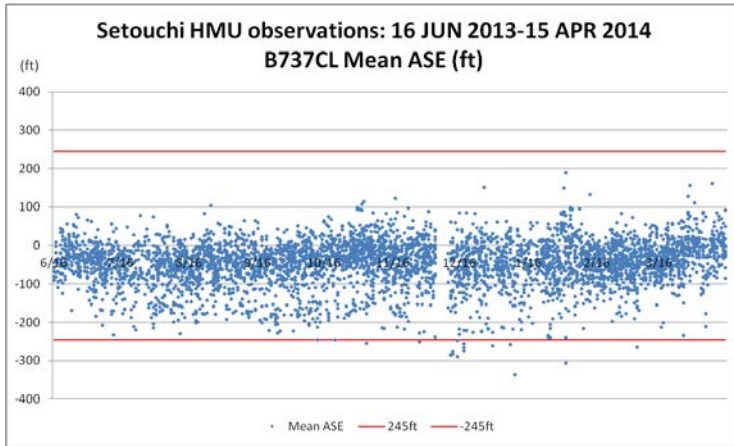
B737NX	TVE	AAD	ASE
AVE	15.4	-0.2	15.6
SD	41.9	1.9	41.8
MAX	241.0	100.0	241.0
MIN	-245.7	-43.3	-243.5
Count	31789	ASE+3SD	141.0

B737NX



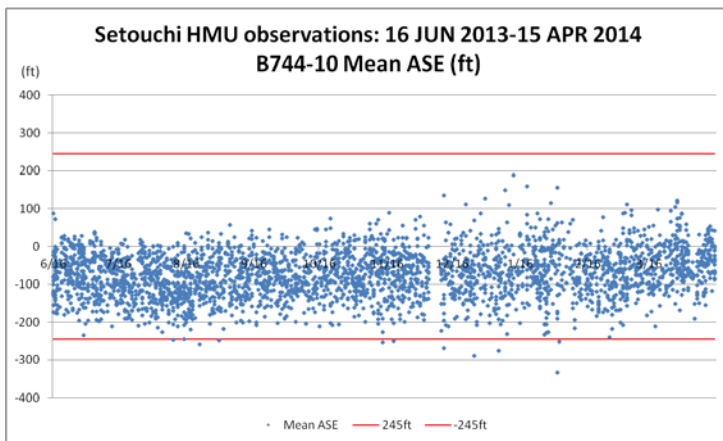
B767	TVE	AAD	ASE
AVE	-43.2	0.2	-43.3
SD	55.0	8.0	55.4
MAX	195.0	100.0	196.8
MIN	-298.2	-190.1	-298.2
Count	16093	ASE+3SD	209.5

B767



B737CL

B737CL	TVE	AAD	ASE
AVE	-44.9	0.0	-44.9
SD	56.9	5.2	56.8
MAX	190.0	100.0	190.0
MIN	-337.2	-100.0	-335.1
Count	4725	ASE+3SD	215.3



B744-10

B744-10	TVE	AAD	ASE
AVE	-74.3	-0.1	-74.2
SD	61.0	9.9	61.5
MAX	187.7	100.0	187.7
MIN	-441.9	-100.1	-441.9
Count	3164	ASE+3SD	258.6