



**International Civil Aviation Organization**

**NINTH MEETING OF THE  
COMMUNICATIONS/NAVIGATION/SURVEILLANCE AND  
METEOROLOGY SUB-GROUP OF APANPIRG  
(CNS/MET SG/9)**

Bangkok, Thailand, 11–15 July 2005

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**Agenda Item 10: ICAO Warning Systems**

**1) review implementation of International Airways Volcano Watch (IAVW)**

**AMENDMENTS TO THE IAVW RELATED PROVISIONS IN  
ASIA/PAC ANP**

(Presented by Secretariat)

**SUMMARY**

The paper presents draft amendments to the FASID Tables related to the implementation of IAVW in the ASIA/PAC region.

**1. INTRODUCTION**

1.1 IAVWOPSG/1 meeting, held in Bangkok from 15 to 19 March 2004, proposed changes to the format of FASID Table MET 3B, Volcanic Ash Advisory Centres and introduction of a new FASID Table MET 3C, Selected State's Volcano Observatories.

1.2 The new format of these Tables was presented at CNS/MET SG/8 meeting and it was explained that the Tables would be finalized after the States provide the necessary information. This paper presents the final drafts of the two FASID Tables related to the implementation of IAVW.

**2. DISCUSSION**

2.1. FASID Table MET 3B, Volcanic Ash Advisory Centres has been finalized and is presented in Attachment A. The meeting is invited to note the new structure of the table including the ACCs and MWOs to which advisories should be sent.

2.2. Regarding the designation of State Volcano Observatories, it is recalled that APANPIRG/15 meeting adopted the following conclusion:

***Conclusion 15/41 – Designation of State volcano observatories***

*That, the Asia/Pacific States that maintain monitoring of active volcanoes, be invited to designate, based on the principles formulated by the IAVWOPSG/1 meeting, selected volcano observatories for inclusion in the new FASID Table MET 3C of the ASIA/PAC FASID (Doc 9673).*

2.3. As a follow up of the above conclusion, a State letter was sent to all States with active volcanoes in the region. The Regional Office received six replies in which nine observatories were designated by five States (Japan, China, Philippines, Indonesia and New Zealand). One reply did not contain a concrete proposal but indicated that the State was seriously considering the designation of an observatory for inclusion in the table.

2.4. A consultation with Darwin VAAC indicated a requirement for inclusion in the Table of the Rabaul Volcano Observatory in Papua New Guinea. However, this observatory has not been officially designated yet.

2.5. The current status of the draft FASID Table MET 3C is presented in Attachment B to this paper.

2.6. Attachment C to the paper contains changes in FASID Table Met 1B, Meteorological Watch Offices, based on information received from States.

2.7. It is expected that the meeting will review these drafts and advice on their inclusion in the consolidated FASID amendment proposal to be issued after the meeting.

**3. ACTION BY THE MEATING**

3.1 The meeting is invited to:

- a) note the information provided in this paper;
- b) review the draft FASID Tables MET 3B and 3C; and
- c) provide information for updating these tables, if any.

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**FASID TABLE MET 3B — VOLCANIC ASH ADVISORY CENTRES***EXPLANATION OF THE TABLE**Column*

1. Location of the volcanic ash advisory centre (VAAC).
2. ICAO location indicator of VAAC (for use in the WMO heading of advisory bulletin).
3. Area of responsibility for the preparation of advisory information on volcanic ash by the VAAC in Column 1.
4. MWOs to which the advisory information on volcanic ash should be sent.
5. ICAO location indicator of the MWOs in Column 4.
6. ACCs to which the advisory information on volcanic ash should be sent.
7. ICAO location indicator of the ACCs in Column 6.

*Note:*        *MWOs and ACCs in italics are situated outside the Asia/Pacific Region*

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VOLCANIC ASH ADVISORY CENTRE	ICAO LOCATION INDICATOR	AREA OF RESPONSIBILITY	MWOs TO WHICH ADVISORY INFORMATION IS TO BE SENT		ACC TO WHICH ADVISORY INFORMATION IS TO BE SENT	
			Name	ICAO LOCATION INDICATOR	Name	ICAO LOCATION INDICATOR
1	2	3	4	5	6	7
			Gia Lam	VGLL	Hanoi Ho-Chi-Minh	VVNB VVTs
			Guandzhou	ZGGG	Guandzhou Changsha Guilin Nanning Sanya	ZGZU ZGCS ZGKL ZGNN ZJSA
			Hong Kong	VHHH	Hong Kong	VHHH
			Incheon	RKSI		RKRR
			<i>Irkutsk</i>	<i>UIII</i>	<i>Irkutsk</i>	<i>UIII</i>
			<i>Khabarovsk</i>	<i>UH HH</i>	<i>Khabarovsk</i>	<i>UH HH</i>
			<i>Kirensk</i>	<i>UIKK</i>	<i>Kirensk</i>	<i>UIKK</i>
			Kunming	ZPPP	Kunming Chengdu Chongqing	ZPKM ZUDS ZUCK
			Lanzhou	ZLLL	Lanzhou Xi'an	ZLAN ZLSN
			<i>Magadan</i>	<i>UHMM</i>	<i>Magadan</i>	<i>UHMM</i>
			<i>Magdagachi</i>	<i>UHBI</i>	<i>Magdagachi</i>	<i>UHBI</i>
			Manila	RPLL	Manila	RPHI
			<i>Nik.-na-Amure</i>	<i>UHNN</i>	<i>Nik.-na-Amure</i>	<i>UHNN</i>
			<i>Okha</i>	<i>UHSH</i>	<i>Okha</i>	<i>UHSH</i>
			<i>Okhotsk</i>	<i>UHOO</i>	<i>Okhotsk</i>	<i>UHOO</i>
			<i>Pet.-Kamchatsky</i>	<i>UHPP</i>	<i>Pet.-Kamchatsky</i>	<i>UHPP</i>
			Phnom-Penh	VDPP	Phnom-Penh	VDPP
			Pyongyang	ZKPY	Pyongyang	ZKKK
			Shanghai	ZSSS	Shanghai Hefei Jinan Nanchang Nanjing Xiamen Qingdao	ZSHA ZSOF ZSTN ZSCN ZSNJ ZSAM ZSQD
			Shenyang	ZYTX	Shenyang Dalian Harbin	ZYSH ZYTL ZYHB
			Taibei	RCTP	Taibei	RCTP
			Tokyo	RJAA	Tokyo Naha Fukuoka Osaka	RJTI ROAH RJDG RJOO
			Ulan-Bator	ZMUB	Ulan-Bator	ZMUB
			Urumqi	ZWWW	Urumqi	ZWWW
			Vientiane	VLVT	Vientiane	VLVT
			<i>Vladivostok</i>	<i>UHWW</i>	<i>Vladivostok</i>	<i>UHWW</i>

VOLCANIC ASH ADVISORY CENTRE	ICAO LOCATION INDICATOR	AREA OF RESPONSIBILITY	MWOs TO WHICH ADVISORY INFORMATION IS TO BE SENT		ACC TO WHICH ADVISORY INFORMATION IS TO BE SENT	
			Name	ICAO LOCATION INDICATOR	Name	ICAO LOCATION INDICATOR
1	2	3	4	5	6	7
			Wuhan <i>Yuzhnosakhalinsk</i>	ZHHH <i>UHSS</i>	Wuhan <i>Yuzhnosakhalinsk</i>	ZHWH <i>UHSS</i>
Washington (United States)	KNES	Oakland Oceanic FIR	Guam Honolulu Kansas City	PGUM PHFO KMKC	Oakland Honolulu Kansas City	KZOA PHZH KZKC
Wellington (New Zealand)	NZKL	Southward from the Equator and from E160 to W140*	Brisbane Honolulu Honiara Melbourne Nadi Nauru Sydney Tahiti Wellington	YBRF PHFO AGGH YMRF NFFN ANAU YSRF NTAA NZKL	Brisbane Honolulu Honiara Melbourne Nadi Nauru Sydney Tahiti Auckland Christchurch	YBBN PHZH AGGH YMMM NFFF ANAU YSSY NTTT NZZO NZZC

\*Note. – Coverage south of 60°S latitude is currently not feasible.

**FASID TABLE MET 3C****SELECTED STATE VOLCANO OBSERVATORIES***EXPLANATION OF THE TABLE**Column*

- |   |  |
|---|--|
| 1 | Provider State of the volcano observatory.   |
| 2 | Name of the volcano observatory.   |
| 3 | Location of the VAAC to which the information related to pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash cloud should be sent. |
| 4 | MWO to which the information related to pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash cloud should be sent.                  |
| 5 | ICAO location indicator assigned to the MWO in Column 4.   |
| 6 | ACC to which information related to pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash cloud should be sent.                      |
| 7 | ICAO location indicator assigned to the ACC in Column 6.   |
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Provider State of volcano observatory	Volcano observatory	VAAC to which the information related to pre-eruption activity/eruption/ volcanic ash cloud should be sent	MWO to which the information related to pre- eruption activity/eruption/ volcanic ash cloud should be sent		ACC to which the information related to pre- eruption activity/eruption/ volcanic ash cloud should be sent	
			Name	ICAO Loc. Ind.	Name	ICAO Loc. Ind.
1	2	3	4	5	6	7
Japan	Sapporo Volcano Observation and Information Centre  Japan Meteorological Agency	Tokyo	Tokyo	RJAA	Tokyo Naha Fukuoka Osaka	RJTI ROAH RJDG RJOO
	Sendai Volcano Observation and Information Centre  Japan Meteorological Agency	Tokyo	Tokyo	RJAA	Tokyo Naha Fukuoka Osaka	RJTI ROAH RJDG RJOO
	Tokyo Volcano Observation and Information Centre  Japan Meteorological Agency	Tokyo	Tokyo	RJAA	Tokyo Naha Fukuoka Osaka	RJTI ROAH RJDG RJOO
	Fukuoka Volcano Observation and Information Centre  Japan Meteorological Agency	Tokyo	Tokyo	RJAA	Tokyo Naha Fukuoka Osaka	RJTI ROAH RJDG RJOO
China	Heilongjiang Wudalianchi Volcano Observatory	Tokyo				
	Jilin Changbai Mountain Tianchi Volcano Observatory	Tokyo				
Philippines	Mayon Volcano Observatory	Tokyo Darwin	Manila	RPLL	Manila	RPHI
Papua New Guinea	Rabaul*	Darwin	Port Moresby	AYPY	Port Moresby	AYPM
Indonesia	Directorate of Volcanology and Geological Hazard Mitigation (DVGHM)	Darwin	Jakarta Ujung Pandang	WIII WAAA	Jakarta Ujung Pandang	WIIF WAAF
India	TBD	Darwin				
New Zealand	Wairakei Research Centre Institute of Geological and Nuclear Sciences	Wellington				
Russian Federation	KVERT**	Tokyo Anchorage				

\* Required by the VAAC, but not confirmed by the Provider State

\*\* To be coordinated with ICAO Office, Paris



TABLE MET 1B – METEOROLOGICAL WATCH OFFICES

MWO location Emplacement du MWO Lugar de la OVM	ICAO location indicator Indicateur d'emplacement OACI Indicador de lugar de la OACI	Area served/Région desservie/Zona de servicio		Remarks Observations Observaciones
		Name/Nom/Nombre	ICAO location indicator Indicateur d'emplace- ment OACI Indicador de lugar de la OACI	
1	2	3	4	5
<b>DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA</b> PYONGYANG/Sunan	ZKPY	Pyongyang FIR and SRR	ZKKK	
<b>FIJI</b> NADI/Nadi Intl	NFFN	Nadi FIR and SRR	NFFF	
<b>FRENCH POLYNESIA</b> TAHITI/Faaa	NTAA	Tahiti FIR and SRR	NTTT	
<b>INDIA</b> KOLKATA/Kolkata CHENNAI/Chennai DELHI/Indira Ghandi Intl MUMBAI/Jawaharlal Nehru Intl	VECC VOMM VIDP VABB	Calcutta FIR and SRR Chennai FIR and SRR Delhi FIR and SRR Mumbai FIR and SRR	VECF VOMF VIDF VABF	
<b>INDONESIA</b>  JAKARTA/Soekarno-Hatta Intl UJUNG PANDANG/Hasanuddin	WIII WAAA	Jakarta FIR/UIR and SRR Ujung Pandang FIR/UIR and SRR	WIIF WAAF	
<b>JAPAN</b> NAHA/Naha TOKYO/New Tokyo Intl	ROAH RJAA	Naha FIR Tokyo FIR/SRR	RORG RJTG	
<b>LAO PEOPLE'S DEMOCRATIC REPUBLIC</b> VIENTIANE/Wattay	VLVT	Vientiane FIR and SRR	VLVT	
<b>MALAYSIA</b> KOTA KINABALU/Kota Kinabalu Intl KUALA LUMPUR/Kuala Lumpur Intl	WBKK WMKK	Kota Kinabalu FIR and SRR Kuala Lumpur FIR and SRR	WBFC WMFC	
<b>MALDIVES</b> MALE/Hulule	VRMM	Male FIR and SRR	VRMM	

MWO location Emplacement du MWO Lugar de la OVM	ICAO location indicator Indicateur d'emplacement OACI Indicador de lugarde la OACI	Area served/Région desservie/Zona de servicio		Remarks Observations Observaciones
		Name/Nom/Nombre	ICAO location indicator Indicateur d'emplacement OACI Indicador de lugarde la OACI	
1	2	3	4	5
<b>MONGOLIA</b> ULAN BATOR/Ulan Bator	ZMUB	Ulan Bator FIR and SRR	ZMUB	Operational monitoring coverage south of 60°S is limited due to the lack of information
<b>MYANMAR</b> YANGON/Yangon Intl	VYYY	Yangon FIR and SRR	VYYY	
<b>NAURU</b> NAURU I./Nauru	ANAU	Nauru FIR and SRR	ANAU	
<b>NEPAL</b> KATHMANDU/Tribhuvan Intl	VNKT	Kathmandu FIR and SRR	VNSM	
<b>NEW ZEALAND</b> NEW ZEALAND/Wellington Intl Kelburn	NZKL	Auckland Oceanic FIR and SRR  New Zealand FIR AND SRR	NZZO  NZZC	
<b>NORTHERN MARIANA ISLANDS (United States)</b> SAIPAN I. (OBYAN)/Saipan I.(Obyan) Intl	PGSN	Guam SRR		
<b>PAKISTAN</b> KARACHI/Quaid-E-Azam Intl LAHORE/Lahore	OPKC OPLA	Karachi FIR and SRR Lahore FIR and SRR	OPKR OPLR	
<b>PAPUA NEW GUINEA</b> PORT MORESBY/Jacksons	AYPY	Port Moresby FIR and SRR	AYPY	
<b>PHILIPPINES</b> MANILA/Ninoy Aquino Intl	<del>RPMM</del> <del>RPLL</del>	Manila FIR and SRR	<del>RPMM</del> <del>RPHI</del>	
<b>REPUBLIC OF KOREA</b> INCHEON/Incheon Intl	RKSI	<del>Daegu FIR and SRR</del> Incheon FIR and SRR	RKRR	
<b>SINGAPORE</b> SINGAPORE/Singapore Changi	WSSS	Singapore FIR and SRR	WSJC	

MWO location Emplacement du MWO Lugar de la OVM	ICAO location indicator Indicateur d'emplacement OACI Indicador de lugar de la OACI	Area served/Région desservie/Zona de servicio		Remarks Observations Observaciones
		Name/Nom/Nombre	ICAO location indicator Indicateur d'emplacement OACI Indicador de lugar de la OACI	
1	2	3	4	5
<b>SOLOMON ISLANDS</b> HONIARA/Henderson	AGGH	Honiara FIR and SRR	AGGG	
<b>SRI LANKA</b> COLOMBO/Katunayake	VCBI	Colombo FIR and SRR	VCBI	
<b>THAILAND</b> BANGKOK/Bangkok Intl	VTBD	Bangkok FIR and SRR	VTBB	
<b>UNITED STATES</b> ANCHORAGE/Anchorage Intl	PAWU	<del>Anchorage Oceanic FIR; portion of Anchorage Continental FIR South of a line between approximately 62N 141W and approximately 6230N 175W and West of a line between approximately 59N 13730W and approximately 5530N 145W; Juneau SRR.</del>	PAZA	
<del>FAIRBANKS/Fairbanks Intl</del>	<del>PAFA</del>	<del>Anchorage Arctic FIR; portion of Anchorage Continental FIR North of a line between approximately 62N 141W and approximately 6530N 175W; Honolulu SRR.</del>	<del>PZAN</del>	
HONOLULU/Honolulu Intl	PHFO	Oakland Oceanic FIR South of 30N, East of 160E and West of 140W; Honolulu SRR.	KZOA	
<del>(JUNEAU, Alaska)</del>	<del>PAJN</del>	<del>Portion of Anchorage Continental FIR East of a line between approximately 59N 13730W and approximately 5530N 145W.</del>	<del>PZAN</del>	
(KANSAS CITY/Missouri) (National Aviation Weather Advisory Unit)	KMKC	Oakland Oceanic FIR North of 30N.	KZOA	
<b>VIET NAM</b> Gialam MWO	VVGL	Hanoi FIR and SRR Ho-Chi-Minh FIR and SRR	VVNB VVTs	