



International Civil Aviation Organization

**SIXTEENTH MEETING OF THE
COMMUNICATIONS/NAVIGATION/SURVEILLANCE AND
METEOROLOGY SUB-GROUP (CNS/MET SG/16) OF APANPIRG**

Bangkok, Thailand, 23 – 27 July 2012

Agenda Item 11: Meteorological advisories and warnings

1) review of METWARN/I TF/2 meeting

REVIEW OF METWARN/I TF/2 MEETING

(Presented by the Co-chairs of the METWARN/I TF)

SUMMARY

This paper provides a summary of the Second Meeting of the Meteorological Advisories and Warnings Implementation Task Force (METWARN/I TF/2) held in Bangkok, Thailand, from 19-20 April 2012.

This paper relates to –

Strategic Objectives:

A: Safety - *Enhance global civil aviation safety*

C: Environmental Protection and Sustainable Development of Air Transport - *Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment*

Global Plan Initiatives:

GPI-18 Aeronautical information

GPI-19 Meteorological Systems

1. Introduction

1.1 The second meeting of the Meteorological Advisories and Warnings Implementation Task Force (METWARN/I TF/2) was held in Bangkok, Thailand, from 19-20 April 2012 and was attended by 54 participants from 17 States, IFALPA and ICAO. The meeting overlapped with the tenth meeting of the OPMET Management Task Force (OPMET/M TF/10) on 19 April to review SIGMET issues and the meeting concluded on 20 April 2012.

2. Discussion

2.1 The executive summary of the METWARN/I TF/2 meeting is provided in **Attachment 1**. The full report may be accessed at the following website: <http://www.bangkok.icao.int/cns/meeting.do>

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2.2 General topics of discussion included: SIGMET tests, errors and follow-up; Volcanic Ash Advisory Centre backup tests; SIGMET Advisory Trial hosted by China; Regional SIGMET Guide review; advisory information for volcanic ash; a proposal to restructure the working arrangements of MET task forces; a review of the group's work plan and follow-up action; guidance for issuance of advisory information on radioactive material and tsunami warnings; and progress on Regional contingency plans. A summary of the findings of the SIGMET tests and outcomes are provided in a WP/34.

2.3 The meeting is encouraged to provide progress on the Agreed Actions by the METWARN/I TF/2 meeting provided in the **Attachment 2**.

2.4 The Work Plan document (see **Attachment 3**), including Task Team, Terms of Reference, Work Program, Communication Strategies, Performance Framework Form, Milestones and Work Plan was reviewed by the METWARN/I TF/2 meeting.

2.5 The meeting proposed a number of updates including: the removal of Tonga from the Task Team; the transfer of SIGMET management tasks back to the OPMET/M TF; inclusion of user requirements from ANSPs, IATA, IFATCA and IFALPA in the Work Plan; links to the RACP/TF in the Work Plan; creation of a single milestone to report annually to MET SG; expansion of the Regional Contingency Plans to include tropical cyclone, radioactive cloud and tsunami; and revised target dates for tasks. Refer to the report of the METWARN/I TF/2 meeting for exact details of the changes from the previous workplan.

2.6 The meeting may consider adopting the following Decision.

Decision 16/x – METWARN/I TF Work Plan

That, the METWARN/I TF Work Plan document be updated to:

- (a) Remove Tonga from the Task Team list;
- (b) Transfer SIGMET Test and Regional SIGMET Guide tasks to the OPMET/M TF Work Plan;
- (c) Add user requirements from ANSPs, IATA, IFATCA and IFALPA in the Work Plan;
- (d) Specify the link to the RACP/TF in the Work Plan;
- (e) Consolidate individual milestones into a single milestone to report back to MET SG, annually;
- (f) Expand the scope of Regional Contingency Plans to include tropical cyclone, radioactive cloud and tsunami; and
- (g) Revised target dates for tasks.

3. Action by the Meeting

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) provide updates to the list of actions agreed; and
- c) review and provide suggested changes to the Work Plan document and consider the adoption of the related Decision.

Attachment 1

METWARN/I TF/2 SUMMARY

Introduction

The second meeting of the Meteorological Advisories and Warnings Implementation Task Force (METWARN/I TF/2) was held in Bangkok, Thailand, from 19-20 April 2012. The meeting was attended by 54 participants from 17 States, IFALPA and ICAO. A conjoint session with the tenth meeting of the OPMET Management Task Force (OPMET/M TF/10) was held on the first day, 19 April 2012, to discuss SIGMET related issues. Highlights of the meeting include:

SIGMET advisory trial

- The meeting recalled that China have issued SIGMET for the Phnom Penh FIR on behalf of Phnom Penh MWO under a bilateral Letter of Agreement between the CAAC and the SSCA of Cambodia (effective 1 June 2009). Cooperation has been strengthened through exchange visits and a future training program is planned in China on SIGMET issuance.
- The SIGMET advisory trial in Asia, hosted by China from April to July 2011, showed some improvement in SIGMET issuance in Lao PDR and DPR Korea; two States which have existing SIGMET deficiencies. Feedback from MWOs and users concerned was encouraging and generally supported the establishment of Regional SIGMET advisory centres. Experience from the SIGMET advisory trial reaffirmed the usefulness of graphical SIGMET information, the importance of meteorological expertise and competencies relevant to the region concerned, the requirement for timely updates to SIGMET information and the necessity for performance monitoring (of SIGMET). Feedback from user groups, such as IATA, and evaluation of the trial in States with deficiencies will be included in presentations at METWWSG/4 and/or CNS/MET SG/16 (**METWARN/I TF/2 Action agreed 2/1**).

Advisory information

- A topic raised in the IVATF on ways to reduce information overload during volcanic eruptions, due to multiple sources of VA-information, was discussed, including the proposal to remove the requirement for WV SIGMET from ICAO Annex 3. Pros of such an initiative were considered to include elimination of redundant VA information and conflicting VA information and removal of deficiencies where States have not been able to provide WV SIGMET. On the other hand, potentially significant cons were also identified including legal and liability issues, as well as sovereignty issues, which may arise from the removal of WV SIGMET. Furthermore, potential knock-on effects to other types of SIGMET were considered as possibly disadvantageous as well as the prerequisite for widespread international agreement. Alternative solutions could include initiatives to increase the expertise and capabilities of MWOs, noting that MWOs should have access and knowledge of local information, which may be difficult to convey in a timely manner to VAACs (e.g. complex, high volume observational data) and would be required by VAACs to replace the function of MWOs in regards to the issuance of VA information. The group agreed to wait for results of discussions at IVATF/4 in June 2012 before developing any detailed proposals and to report outcomes of discussions to IAWWOPSG/7 in Bangkok, Mar 2013 (**METWARN/I TF/2 Action agreed 2/2**), and findings from IVATF/4 to CNS/MET SG/16 (**METWARN/I TF/2 Action agreed 2/3**).
- Investigation of optimal exchange of meteorological information in the APAC regions is also required; with emphasis on VA information (**METWARN/I TF/2 Action agreed 2/4**), and detailed user requirements in the ASIA/PAC regions (with regards to VA advisories) should be a priority for the MET/ATM TF (**METWARN/I TF/2 Action agreed 2/5**).

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- The meeting discussed the broader problem of providing weather hazard advisory information to end users, with a focus on the user requirements, and noted that airlines used VA advisory information (including graphics) as a defacto warning (from perceived centres of excellence) in recent volcanic ash events. The meeting recalled that the WAFC SIGWX product evolved from not too dissimilar a problem (i.e. State-based, text products to centralized graphical products) and required careful consideration of legal, liability and sovereignty issues. Furthermore, the development of the centralized, graphical SIGWX WAFS product had kept pace (more effectively than SIGMET) with the technological developments and advances in meteorology and in the aviation industry.

Structure and working arrangements of MET groups

- Options to streamline the structure and working arrangements for the task forces of the meteorological sub-group of APANPIRG were discussed and a proposal to incorporate the current 4 groups into 3 was proposed as follows:
 - MET Requirements TF (incorporating MET/ATM TF);
 - MET Management TF (incorporating OPMET/M TF);
 - MET Implementation TF (incorporating METWARN/I TF and WAFS/I TF)
- Further efficiencies could be gained through increased reliance on virtual meetings (e.g. Email and tele-conference), and holding face-to-face meetings of two or more groups back-to-back within the same week to economize on participants' travel time and expenses. The groups should be task focused and not too general and a detailed proposal will be presented to CNS/MET SG/16 (**METWARN/I TF/2 Action agreed 2/6**).

Review of the Work Plan

- Proposed changes to the Work Plan document (i.e. Task Team, Terms of Reference, Work Program, Communication Strategies, Performance Framework Form, Milestones and Work Plan) include: remove Tonga from the Task Team list; remove references to SIGMET Test and SIGMET Guide tasks (moved these to the OPMET/M TF Work Plan); add user requirements from ANSPs, IATA, IFATCA and IFALPA in the work of the group; specify the link to the RACP/TF in the Work Plan; consolidate the individual milestones into one main milestone to report back to CNS/MET SG, annually; expand the scope of Regional Contingency Plans to include tropical cyclone, radioactive cloud and tsunami; and reviewed target dates for tasks.

Review of follow-up action

- Follow-up to METWARN/I TF/1 (Mar 2011) was discussed and mostly completed. With regards to action agreed 1/5, most States participating in SIGMET tests used Z99 sequence number; other States will do so in 2012. Follow-up to APANPIRG/22 (Sep 2011) required further clarification, as discussed in the OPMET/M TF/10 meeting (**OPMET/M TF/10 Action agreed 10/2**).

Review of educational material

- Radioactive material: The meeting discussed outcomes from IAVWOPSG/6 in Dakar, Senegal, Sep 2011, which concluded that ad-hoc groups continue with tasks identified to address key issues concerning the importance, complexity and lack of expertise on radioactive clouds (Conclusion 6/29 and Conclusion 6/30).
- Tsunami: The meeting agreed to ask the METWSG to take into consideration the requirements of the ASIA/PAC regions in the development of global requirements for tsunami warning information (**METWARN/I TF/2 Action agreed 2/7**).

Review progress on Contingency Plans

- Composition of the ad-hoc group to work on the framework for ASIA/PAC Regional (MET) Contingency Plans was reviewed (only 1 member present) and the meeting agreed to expand the group to include members from Japan and IFALPA. No further progress was reported by the

ad-hoc group since the ATM/AIS/SAR/SG/21–WP/05, Jul 2011. The ad-hoc group will be reconvened to continue action against the tasks of the group (**METWARN/I TF/2 Action agreed 2/8**).

- Outcomes from the RACP/TF/1 meeting in Bangkok, 17-19 Apr 2012, were discussed with regards to the RACP/TF role for ATM contingencies and the link to MET (through METWARN/I TF). The link between RACP/TF and METWARN/I TF should be strengthened through exchange of information on progress and requirements of the respective groups.

Aerodrome Warnings

- A proposal was considered to source tsunami warning information directly from Regional/National Tsunami Warning Centres and noted the benefits from such a proposal but highlighted the need for standardization of tsunami warning formats and dissemination methods to aviation users.

IFALPA discussion on volcanic ash information

- The meeting was informed by IFALPA which represents pilots worldwide that IFALPA considers present volcanic ash advisory framework does not always meet the requirements of users, particularly in big events such as Icelandic volcano eruption occurred in 2010. IFALPA also noted that not enough consistency between VA information provided by States would be problematic, especially when there are multiple SIGMETs across a region for a single event, e.g. Europe, leading to information overload, and additionally both VA SIGMETs and VA advisories are lengthy, difficult to transmit and not user focused. It was suggested that to introduce probabilistic forecast in VA forecast, as in TAFs, would be more useful for the users. The meeting agreed that, under the IAVWOPSG and/or other relevant groups, discussions on the way forward to improve VA information will likely go on for a couple more years before a solution can be found, however action is required to harmonize VA information, which is provided in various overlapping formats, and current supporting guidance documents in relation to VA information are outdated.

Next meeting

- Next meeting (METWARN/I TF/3) was tentatively scheduled in the last week of March 2013 in Bangkok, Thailand (back-to-back with OPMET/M TF/11).

Attachment 2

FOLLOW-UP OF METWARN/1 TF/2 ACTION AGREED

Status on **4 July 2012**

✓ = completed

No.	Title/Action	Follow-up action (target/completion dates in brackets)
2/1	<p>SIGMET advisory trial.</p> <p>That, an evaluation of the SIGMET advisory trial in Asia (hosted by China) – including feedback from IATA – is presented for further discussion.</p>	<p>China/Secretariat ✓ WP for METWSG/4 and/or CNS/MET SG/16 IP/7 (& SN/8) presented at METWSG/4, IP drafted for CNS/MET SG/16 (May & Jul 2012)</p>
2/2	<p>Volcanic Ash Advisory and Warning information.</p> <p>That, the details of discussions in this meeting concerning the pros and cons of removing the requirement for SIGMET for VA be reported to the IAVWOPSG for further consideration.</p>	<p>States/Secretariat WP for IAVWOPSG/7 To commence (February 2013)</p>
2/3	<p>Volcanic Ash Advisory and Warning information.</p> <p>That, the outcomes from the IVATF/4 meeting concerning the proposed removal of the requirement for SIGMET for VA be reported to the CNS/MET SG for further consideration.</p>	<p>IVATF /Secretariat ✓ WP for CNS/MET SG/16 IP drafted (Jul 2012)</p>
2/4	<p>Sub-Regional exchange of volcanic ash information.</p> <p>That, an investigation of the optimal exchange of MET information in relation specifically to VA in the APAC regions be conducted to facilitate the group's further consideration of the proposal to remove the requirement for SIGMET for VA.</p>	<p>States/Secretariat WP for METWARN/I TF/3 To commence (February 2013)</p>
2/5	<p>User requirements for volcanic ash information.</p> <p>That, the MET/ATM TF be asked to establish detailed user requirements in the APAC regions in relation to VA information.</p>	<p>Secretariat ✓ WP for CNS/MET SG/16 WP drafted (Jul 2012)</p>
2/6	<p>Structure and working arrangements of MET groups.</p> <p>That, proposals for streamlining the structure and</p>	<p>TF chairs/Secretariat ✓ WP for CNS/MET SG/16</p>

	operation of MET groups (under APANPIRG) be further developed and presented to CNS/MET for consideration.	WP drafted (Jul 2012)
2/7	Aerodrome warning on Tsunami. That, the METWSG be asked take into consideration the requirements of the Asia/Pacific regions in its development of global requirements for Tsunami warning information.	Secretariat ✓ Forward report to the Secretariat of METWSG – emphasizing request concerning Tsunami Members participated in METWSG/4 (May 2012); Report Emailed to METWSG (Jul 2012)
2/8	Ad-hoc group on regional contingency plans. That, the ad-hoc group tasked with the framework for APAC Regional (MET) Contingency Plans be refreshed to include Japan and IFALPA (plus updated contact for Australia) and re-commence action against the established tasks of the group.	Secretariat Email to ad-hoc group members Email sent (Jul 2012) Ad-hoc group WP for METWARN/I TF/3 (February 2013) To commence

Attachment 3

**ICAO APANPIRG
CNS/MET
METEOROLOGICAL ADVISORIES and WARNINGS
IMPLEMENTATION TASK FORCE (METWARNI/TF)**

1.TASK TEAM		
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2.DESRIPTION				
Objective	Improve the quality of meteorological advisories and warnings and implement the International Airways Volcano Watch (IAVW) and International Tropical Cyclone Watch (ITCW).			
Benefits	Improve in-flight safety by providing information on volcanic ash, tropical cyclone and other hazardous weather. Improve pre-flight planning by optimizing flight routes with respect to volcanic ash, tropical cyclone and other hazardous weather phenomena.			
Terms of Reference	Under guidance from ICAO Secretariat: <ul style="list-style-type: none"> • Maintain awareness of current and future requirements with respect to the issuance of meteorological advisories and warnings; • Maintain awareness of the implementation of meteorological advisories and warnings within the ASIA/PAC Region and any deficiencies; • Continually seek ways to improve the operational effectiveness of the meteorological advisory and warning system;and • Provide advice to the CNS/MET Sub-group on the above issues. 			
Work Program	The work to be addressed by the ASIA/PAC METWARN/I TF includes: <ul style="list-style-type: none"> • Review procedures for the issuance of meteorological advisories and warnings in the region and propose actions for their improvement to related performance objectives; • In conjunction with OPMET Management Task Force, investigate the deficiencies in the format and dissemination of meteorological advisories and warnings and propose remediation plans; • Respond to the needs of the States for guidance and/or training related to the implementation of meteorological advisories and warnings-and inform OPMET/M TF of changes required to the SIGMET guide; • In conjunction with MET/ATM TF, provide meteorological input for contingency planning for specific phenomenon including Volcanic Ash, Radioactive Cloud, Tropical Cyclone and Tsunami; • Follow the developments in the States related to the improvement of meteorological advisories and warnings and provide regional input on these matters to relevant ICAO and WMO groups and to gather user requirements from ANSPs, IATA, IFATCA and IFALPA; • Report on its work to the CNS/MET Sub-group of APANPIRG; and • Maintain a link to the Regional ATM Contingency Plan Task Force (RACP/TF). 			
3. COMMUNICATION STRATEGIES				
Description	Target Audience	Delivery Method	Frequency/ Date	Responsibility
Work Plan	Task Force Members	Document via email and posted on ICAO Bangkok website	As required but reviewed at least quarterly	Co-Chairs

General correspondence	Task Force Members	Email	As required	Task Force Members
Task Force Meeting	Task Team Members	Meeting in conjunction with OPMET M/TF	Yearly in March	Co-Chairs
Status & Milestone Reports	ICAO Secretariat and Task Team Members	Report via email	Quarterly	Co-Chairs
Task Force Report	METWARN I/TF and OPMET M/TF	Working Paper	Yearly	Co-Chairs
Task Force Report	APANPIRG MET SG	Working Paper	Yearly	Secretariat

4. PERFORMANCE FRAMEWORK FORM (PFF)

Tasks	Time Frame	Responsibility	Status	Milestone
Task 1: Monitor and provide assistance to the regional implementation of meteorological warnings and advisories that include volcanic ash (VA) and tropical cyclone (TC) advisories and meteorological warnings and advisories based on current and future requirements	2012-2016	METWARN/I TF	In progress	1
Task 2: Track and investigate deficiencies in the format and dissemination of meteorological advisories and warnings and propose remediation plans and provide information to ICAO and WMO groups for possible assistance	2012-2016	METWARN/I TF OPMET/M TF	In progress	1,2
Task 3: Review WC, WV & WS SIGMET test results and implement improvements.	2012-2016	METWARN/I TF	In progress	1
Task 4: Provide guidance and/or training related to the implementation of meteorological advisories and warnings, including input to the Regional SIGMET Guide as they relate to the Annex 3 amendment cycle.	2013	METWARN/I TF OPMET/M TF RO	In progress	1,3
Task 5: Develop framework for contingency plans for specific phenomenon, including VA, radioactive cloud, TC and Tsunami, with consideration to global ICAO groups and WMO developments.	2013	METWARN/I TF MET/ATM TF	In progress	3

5. MILESTONES

Milestone	Accountability	Dates	Status
<i>Milestone 1: Report back to MET SG on regional performance and action plan</i>	<i>Co-chairs</i>	<i>July (annually)</i>	
<i>Milestone 2: Review and further develop suitable educational material</i>	<i>Co-chairs</i>	<i>July (annually)</i>	
<i>Milestone 3: Develop framework for ASIA/PAC Regional (MET) Contingency Plans</i>	<i>Keith</i>	<i>Mar 2013</i>	

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<i>Milestone 4: Review requirements from ASIA/PAC Regional (MET) for dissemination of Tsunami warnings</i>	<i>Co-chairs</i>	<i>Mar 2013</i>	
6. WORK PLAN			
Task / Milestone	Accountability	Predecessors	Date
Activity1: SIGMET TESTS			
Task 1.1: Review OPMET report on SIGMET tests	Co-Chairs	-	March (annually)
Task 1.2: Develop action plan to fix identified deficiencies	Task Force	OPMET report	During meeting
<i>Milestone 1: Report back to MET SG on regional performance and action plan</i>	Co-Chairs	-	July (annually)
Activity2: EDUCATIONAL MATERIAL			
Task 2.1: Review current SIGMET posters (Future Annex 3 amendments)	Task Force	-	Following Annex 3 amendments
Task 2.2: Review the requirements for educational material in light of OPMET results	Task Force	-	February 2013
Task 2.3: Consider the requirement for seminars/workshops	Task Force	-	February 2013
<i>Milestone 2: Review and further develop suitable educational material</i>	Co-Chairs		July (annually)
Activity3: REGIONAL CONTINGENCY PLANS			
Task 3.1: Report on the progress of IVATF to METWARN I/TF	Co-chairs	-	Mar 2013
Task 3.2: Considering existing VA procedures and plans in the ASIA/PAC, and in light of the issuance of the EUR/NAT, NAM/SAM contingency plans, consider the appropriateness of an ASIA/PAC contingency plan, and develop possible framework.	Task Force	-	Mar 2013
Task 3.3 Consider existing contingency plan in APAC region (e.g., TC, radioactive cloud and Tsunami)	Task Force	-	Mar 2013
<i>Milestone 3: Develop framework for ASIA/PAC Regional (MET) Contingency Plans</i>	<i>Keith</i>		<i>Mar 2013</i>

Activity 5: TSUNAMI				
Task 5.1: Report on the progress of topic from METWSG/4 for regional applications	Co-Chairs	-	March 2013	
Task 5.2: Review outcomes from METWSG/4 in relation to the provision of Tsunami Warnings to aerodromes	Task Force	-	Mar 2013	
<i>Milestone 4: Review requirements from ASIA/PAC Regional (MET) for dissemination of Tsunami warnings</i>	<i>Co-Chairs</i>		<i>Mar 2013</i>	
