



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 10: Regional Implementation of International Tropical Cyclone Watch (ITCW)

IMPLEMENTATION OF TROPICAL CYCLONE ADVISORIES IN GRAPHICAL FORM

(Presented by the Secretariat)

SUMMARY

This paper provides a summary on the implementation of tropical cyclone advisories in graphical form.

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 Amendment 75 to Annex 3 that became applicable 18 November 2010 includes the recommendation (Annex 3, Appendix 2, 5.1.3) for providing graphical advisories on tropical cyclone from Tropical Cyclone Advisory Centres (TCACs). This is in response to aeronautical requirements stated by the International Air Transport Association (IATA). Furthermore, guidance on the delivery and availability of this information is provided in the ICAO Manual of Aeronautical Meteorological Practice (Doc 8896) as provided in the **Attachment** to this paper. The graphical advisories are expected to be available at the websites provided for use by the World Area Forecast Centres (WAFCs), airlines and operators.

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2. Discussion

2.1 The meeting is reminded of the role of the Satellite Distribution System Operations Group (SADISOPSG) in organizing the OPMET exchange/dissemination programmes in close coordination with the MET and CNS/MET sub-groups concerned in the AFI, ASIA, EUR and MID Regions and ensuring SADIS adherence to relevant ICAO and WMO standards, recommended practices and procedures. In view of the importance of non-scheduled OPMET information for aviation (e.g. SIGMET, AIRMET, **tropical cyclone** and volcanic ash **advisories**), and the Annex 3 recommendation for providing graphical advisories, the SADISOPSG decided to consult all the TCACs concerning their plans to implement tropical cyclone advisories in graphical format (SADISOPSG Conclusion 16/20 refers).

2.2 Results from the global survey of TCACs conducted by the SADISOPSG Secretariat to determine the status of implementation of tropical cyclone graphical (TCG) advisories – specifically with regards the WMO abbreviated header lines (AHLs) to be used for such advisories and the arrangements with the SADIS Provider State concerning their transmission to the SADIS gateway – were reported at the 17th meeting (SADISOPSG/17) in Cairo, May 2012.

2.3 The SADISOPSG survey indicated that, out of the five TCACs located in the Asia/Pacific Regions, only one – Nadi – has implemented the tropical cyclone advisory in graphical format (i.e. in BUFR). Nadi also indicated that the WMO AHLs have been implemented, though there are no plans to enter into a bilateral arrangement with the SADIS Provider State in the UK to ensure that the TCG can be transmitted to aviation users worldwide via the ICAO aeronautical fixed service.

2.4 The survey also indicated that Darwin plans to issue the tropical cyclone advisory in graphical format (i.e. in PNG) from the start of the 2012/13 tropical cyclone season in October 2012, the WMO AHLs are yet to be determined and Darwin is in a position to enter into a bilateral arrangement with the SADIS Provider State to ensure that the TCG can be transmitted to aviation users worldwide via the ICAO aeronautical fixed service.

2.5 New Delhi and Tokyo both indicated in the survey that tropical cyclone advisories are currently provided in graphical format on their respective websites – though not in the Annex 3 recommended BUFR or PNG format. More recently, New Delhi has indicated that the TCG will be implemented in PNG format during 2012 – with the WMO AHLs – though it's not clear whether New Delhi is in a position to enter into a bilateral arrangement with the SADIS Provider State to ensure that the TCG can be transmitted to aviation users worldwide via the ICAO aeronautical fixed service.

2.6 Honolulu indicated that there are no plans at this time to produce tropical cyclone advisory in graphical format, though the possibility maybe explored in coordination with Miami [in 2013-2014].

2.7 Recognizing that the provision in Annex 3 (Appendix 2, 5.1.3) is a recommended practice, and that, as such, the availability of tropical cyclone advisories in graphical format from the TCACs is considered desirable in the interest of safety, regularity or efficiency of international air navigation, the (SADISOPSG) Secretariat intends to bring these matters to the attention of the WMO Seventh Tropical Cyclone RSMC/TCWC Technical Coordination Meeting to be held in Indonesia in November 2012.

2.8 In accordance with harmonization between the SADIS and World Area Forecast Internet File Service (WIFS), it would be expected that the tropical cyclone advisories in graphical format would also be transmitted to the WIFS Provider State. TCACs may wish to update the meeting on plans to arrange transmission of the Annex 3 compliant TCG via WIFS.

3. Action by the Meeting

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) provide information on the progress of implementing TC advisories in graphical form.

Attachment

Doc 8896, Manual of Aeronautical Meteorological Practice, Ninth Edition – 2011

4.3.4 Graphical tropical cyclone and volcanic ash advisories

4.3.4.1 Tropical cyclone and volcanic ash advisories in graphical format display all the information contained in the corresponding alphanumeric advisory. Furthermore, graphical tropical cyclone advisories include information additional to the alphanumeric advisories concerning the extent of the gale-force surface winds and the areas affected by frequent CB clouds. Templates for a tropical cyclone and a volcanic ash advisory in graphical format are given in Appendix 1 to Annex 3 (Model TCG and Model VAG refer).

4.3.4.2 Graphical advisories are to be prepared in the portable network graphic (PNG) format or in the BUFR code form. In practice, the TCAC and VAAC concerned prepare graphical advisories in the PNG format only since no BUFR code tables exist for the graphical advisories and the BUFR code form is expected to be replaced by the extensible mark-up language (XML) during the next few years. To prepare tropical cyclone and volcanic ash advisories in graphical format, the TCAC and VAAC can use any graphical software which includes PNG format. However, for ease of use and for consistency between the alphanumeric and graphical advisories, it is useful to have both linked to a common database containing analysis and forecast data.

4.3.4.3 The graphical display of tropical cyclone and volcanic ash advisories should be clear and uncluttered, particularly in regard to labelling since graphical advisories are being increasingly used by aviation users in lieu of alphanumeric advisories and of tropical cyclone/volcanic ash SIGMET.

4.3.4.4 The ICAO AFTN which in principle should be used to exchange OPMET information cannot accommodate graphical advisories. Therefore, the TCAC and VAAC are expected to make their graphical advisories available through their public Internet websites. The following URL addresses can be used to access tropical cyclone advisories:

- a) TCAC Darwin: www.bom.gov.au;
- b) TCAC Honolulu: www.prh.noaa.gov/cphc;
- c) TCAC La Réunion: www... [information awaited];
- d) TCAC Miami: www.nhc.noaa.gov;
- e) TCAC Nadi: www... [information awaited];
- f) TCAC New Delhi: www.imd.gov.in/section/nhac/dynamic/cyclone.htm; and
- g) TCAC Tokyo: www.jma.go.jp/en/typh/.

The websites for the VAAC are included in Doc 9766.

4.3.4.5 Moreover, graphical advisories can be delivered over the public Internet following the guidance contained in the *Guidelines on the Use of the Public Internet for Aeronautical Applications* (Doc 9855). Consideration should be given to download size, as some users may have limited bandwidth.

4.3.5 Updates to both types of advisory information are issued, as necessary, but at least every six hours.