



International Civil Aviation Organization

**Seventh Meeting of CNS/MET Sub-Group of APANPIRG and
Tenth Meeting of CNS/ATM IC Sub-Group of APANPIRG**

Bangkok, Thailand, 15 – 21 July 2003

**Agenda Item 10: Implementation of ICAO Warning Systems –
Tropical cyclone advisories and warning**

**IMPLEMENTATION OF TROPICAL CYCLONE ADVISORIES
AND WARNINGS IN ASIA/PAC REGION**

(Presented by Secretariat)

SUMMARY

This paper presents information regarding the implementation of the tropical cyclone advisories by the TCACs and tropical cyclone SIGMETs by the MWOs in the ASIA/APAC Regions. Information on the ongoing coordination with the WMO on the subject is provided.

1. INTRODUCTION

1.1 The CNS/MET SG/6 meeting, 2002, discussed some deficiencies related to the implementation of the tropical cyclone (TC) advisory and warnings in the ASIA/PAC Region. A significant progress has been achieved since then, but there are still some outstanding problems. Recent developments of TC advisory and warning system in the region is discussed in the following paragraphs. Proposals for further improvement of the system are discussed.

2. DISCUSSION

Implementation of the Annex 3 format of the TC advisories by the TCACs

2.1 The MET Divisional Meeting (2002) noted that some of the designated Tropical Cyclone Advisory Centres (TCAC) did not yet issue their TC advisories in the format required by ICAO. The meeting formulated recommendation 1/21, which invited all TCAC Provider States to implement the ICAO format Annex 3 for the TC advisories for aviation.

2.2 As follow-up of this recommendation, a letter was sent by the ICAO Regional Office to the TCAC Provider States in the ASIA/PAC region calling for implementation of the issuance of TC advisories for aviation in full accordance with the format spelled out in Annex 3, paragraph 3.7.2. The letter also emphasised that the forecasts of the position of the TC centre should be for fixed valid times of 12, 18 and 24 hours after the time of issuance of the advisory.

2.3 The implementation of the ICAO format for the TC advisories for aviation became even more urgent after the general TC warnings, with WMO data designator WT, were removed from

SADIS broadcast on 6 February 2003. This was done as a follow up of agreement by SADISOPSG/7, 2002, since there was no stated aeronautical requirement for these warnings. The only TC advisory information disseminated via SADIS should be the advisories specified by Annex 3 and with WMO data designator FK.

2.4 Most of the TCACs in the ASIA/PAC cooperated fully to the ICAO effort for standardization of the TC advisories according to Annex 3. TCACs Darwin, Nadi and Tokyo have implemented the correct TCA since the beginning of 2003; the TCAs from TCACs Honolulu and Miami are in full compliance with Annex 3 since May 2003.

2.5 It should be noted that the implementation of the TC advisory format has been achieved as a result of an excellent cooperation between ICAO, TCAC Provider States, IATA and WMO, where each party provided contribution as follows:

- TCAC Provider States adapted their operational system to the new requirements;
- IATA has been scrutinizing the format of the TC advisories and notifying ICAO on any discrepancies observed;
- WMO through the regional tropical cyclone committees and panels adopted the amendments to the corresponding TC operational plans, proposed by ICAO and introduced in these plans the Annex 3 format of the TC advisories.

Coordination with WMO

2.6 During the period after CNS/MET SG/6 meeting, ICAO attended as observer the 35th Session of ESCAP/WMO Typhoon Committee, Chiang-Mai, Thailand, 19 –25 November 2002 and the 30th Session of the WMO/ESCAP Panel on Tropical Cyclones, Islamabad, Pakistan, 4 - 10 March 2003.

2.7 The purpose of ICAO attendance at the WMO Sessions on tropical cyclones was to present the Annex 3 format of the tropical cyclone advisory and SIGMET messages for aviation that formed part of the Amendment 72 to ICAO Annex 3. The meetings were advised that the TCACs and MWOs should adhere strictly to the internationally agreed formats of the advisories and SIGMETs in order to ensure a uniform interpretation and to allow for automatic reception and processing by the users.

2.8 It was also emphasized that the advisories and SIGMETs form part of the OPMET information and thus they should be disseminated via the ICAO AFS, as specified by the Annex 3.

2.9 In order to foster the implementation of the ICAO tropical cyclone advisories and warnings by the WMO RSMC which serve as TCACs, ICAO proposed amendments to the WMO Tropical Cyclone Operational Plans and Manuals for the respective areas of responsibility, aimed at harmonizing these documents with ICAO Annex 3/ WMO Technical Regulations (C.3.1). The proposals were adopted by the meetings and specifications related to the message formats, correct WMO headings and communication means to be used for the TC advisories and SIGMETs were included in the *Tropical Cyclone Operational Plan for the Bay of Bengal and the Arabian Sea* (WMO/TD – No. 84) and the *Typhoon Committee Operational Manual* (WMO/TD-No. 196).

Outstanding issues

2.10 Implementation of TCAC New Delhi. The only TCAC in the ASIA/PAC region that has not yet implemented the Annex 3 format for the TC advisories for aviation is TCAC New Delhi. The lack of TC advisories for the Bay of Bengal and Arabian Sea is considered a serious deficiency in view of the large number of important air routes, especially over the Bay of Bengal. This issue has been discussed from ATM perspective by the ATA/AIS/SAR SG/13 meeting in June 2003. It was identified that, the information for tropical cyclones or other large convective clusters was of vital

importance for the planning and implementation of Large-Scale Weather Deviation Contingency Procedures by the ACCs. The meeting expressed a requirement for additional MET support for the ATM and formulated a draft conclusion as follows:

Draft Conclusion 13/xx - MET support to ATM large-scale weather deviations contingency procedures

That,

- a) States should strengthen the coordination between the ATS units and their associated MWOs in regard to the provision of SIGMET information, in particular for weather phenomena that cause significant changes in the ATC procedures, such as LSWD contingency procedures;
- b) ICAO is invited to develop provisions for additional service to the ATS units in regard to the weather phenomena that cause significant changes in the ATC procedures, such as LSWD contingency procedures; this service should include, as a minimum, supply of the ATS units with VA and TC advisories.

In view of the above, the urgent implementation of the requirements for TC advisories by TCAC New Delhi should be given high priority and the meeting is invited to consider a draft conclusion, as follows:

Draft Conclusion 7/xx – Implementation of the requirement for TC advisories by TCAC New Delhi

That, India, as TCAC Provider State, is invited to implement, as a matter of urgency, the requirement for issuance of TC advisories by TCAC New Delhi as specified in the ASIA/PAC Basic ANP and FASID (Doc 9673), following the provisions of Annex 3, regarding the format of these advisories.

2.11 TCAC Tokyo – lack of 18-hour forecast. TCAC Tokyo has implemented the Annex 3 format and issues tropical cyclone advisories as required. However, the centre has not yet included the +18-hour forecast in the advisories. The matter was discussed during the ICAO MET mission to Japan in April 2003. The reason for non-inclusion of the +18-hour forecast was that the model results on which the TC advisories are based, were issued for +12 and +24-hour and there was no proven method for interpolation for the +18-hour. Nevertheless, it was stressed that this forecast is important and TCAC Tokyo should continue to search for a solution of this problem.

2.12 TC names used in the TC advisories. ICAO was notified that in some advisories issued by TCAC Tokyo the name of the tropical cyclone was given by more than one word and that was not according to the format specified by Annex 3. It was also stated that this might create some confusion or problems with the automatic processing of the messages. The consultation with the TCAC Tokyo showed that the centre was following the definition of TC name given in the *Typhoon Committee Operational Manual* (WMO/TD-No. 196). In this regard, it should be noted that the assignment of TC names is responsibility of the WMO RSMCs and that different procedures and methodology is used in the regions. However, for the aviation users it is important to have a unique name assigned to each tropical cyclone and that this name is used by the TCAC and consequently by the MWOs in the issuance of TC advisories and SIGMETs. In view of this the meeting may wish to invite WMO to address this matter.

2.13 TC SIGMETs. While a significant improvement has been achieved in the implementation of the TC advisories by the TCACs, the issuance of SIGMETs for tropical cyclones with WMO data designator WC by the MWOs, is still a serious implementation issue. This issue will be addressed in a separate working paper on the problems related to SIGMET.

Further development of the ICAO tropical cyclone advisory and warning system

2.13 The meeting may wish to recall that the CNS/MET SG/6 meeting was presented with feed-back from States regarding the provision of TC advisories and warnings. It was felt that certain improvements were desirable in the formats and procedures, like inclusion in the TC advisory a “+6 hour” forecast of the TC centre, introduction of a RMK section, etc. The meeting is invited to consider if further improvements of the provisions related to the TC advisories and SIGMETs should be addressed by ICAO and if there is agreement on this issue, to consider a draft conclusion as follows:

Draft Conclusion 7/xx - Further development of the ICAO tropical cyclone advisory and warning system

That, ICAO is invited to consider further development of the tropical cyclone advisory and warning system for aviation based on the new requirements regarding the formats and procedures related to the tropical cyclone advisories and SIGMETs.

3. Action by the Meeting

3.1 The meeting is invited to :

- a) note the information regarding the implementation of the TC advisories and SIGMETs in the ASIA/PAC regions;
- b) review the outstanding issues and agree on the proposed draft conclusions; and
- c) consider further action to be taken to improve the implementation of the TC advisories and warnings in the ASIA/PAC Regions.
