

PART VI

METEOROLOGY (MET)

INTRODUCTION

1. This part of the Asia and Pacific (ASIA/PAC) Basic Air Navigation Plan contains elements of the existing planning system and introduces the basic planning principles, operational requirements and planning criteria related to aeronautical meteorology (MET) as developed for the ASIA/PAC regions.

2. As a complement to the Statement of Basic Operational Requirements and Planning Criteria (BORPC) set out in Part I, Part VI constitutes the stable guidance material and considered to be the minimum necessary for effective planning of MET facilities and services in the ASIA/PAC regions. A detailed description/list of the facilities and/or services to be provided by States in order to fulfill the requirements of the plan is contained in the ASIA/PAC Facilities and Services Implementation Document (FASID). During the transition and pending full implementation of the future communications, navigation and surveillance/air traffic management (CNS/ATM) system, it is expected that the existing requirements will gradually be replaced by new CNS/ATM-related requirements. Further, it is expected that some elements of the CNS/ATM system will be subject to amendment, as necessary, on the basis of experience gained in their implementation.

3. The Standards, Recommended Practices and Procedures to be applied are contained in:

- a) Annex 3 — *Meteorological Service for International Air Navigation*; and
- b) *Regional Supplementary Procedures* (Doc 7030).

4. Background information of importance in the understanding and effective application of this part of the plan is contained in the *Report of the Third Asia/Pacific*

Regional Air Navigation Meeting (Doc 9614, ASIA/PAC/3 (1993)), supplemented by information appropriate to the ASIA/PAC regions which is contained in the reports of the other regional air navigation (RAN) meetings.

5. A RAN meeting recommendation or conclusion, ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG) conclusion or ICAO operations group conclusion shown in brackets below a heading indicates the origin of all paragraphs following that heading. A RAN meeting recommendation or conclusion, APANPIRG conclusion or ICAO operations group conclusion shown in brackets below a paragraph indicates the origin of that particular paragraph.

METEOROLOGICAL SERVICE REQUIRED AT AERODROMES AND REQUIREMENTS FOR METEOROLOGICAL WATCH OFFICES (FASID Tables MET 1A and MET 1B)

6. The service to be provided at international aerodromes listed in the Appendix to Part III of the Basic ANP is set out in FASID Table MET 1A. [ASIA/PAC/3, Recs. 8/1 and 8/16]

7. The service to be provided for flight information regions (FIRs), upper flight information regions (UIRs), control areas (CTAs) and search and rescue regions (SRRs) is set out in FASID Table MET 1B. [ASIA/PAC/3, Recs. 8/2 and 8/16]

8. Hourly routine observations should be made at all aeronautical meteorological stations, to be issued as local routine reports and METAR, together with special observations to be issued as local special reports and SPECI. [ASIA/PAC/3, Rec. 8/16]

9. TAF should be issued, at intervals of six hours, with the period of validity beginning at one of the main synoptic hours (00, 06, 12, 18 UTC). The period of validity should be of 24 or 30 hours to meet the requirements indicated in FASID Table MET 1A. The filing time of the TAF bulletins should be one hour before the start of the period of validity.
[APANPIRG/19 Con. 19/46]

10. The forecast maximum and minimum temperature together with their respective times of occurrence should be included in TAF for certain aerodromes as agreed between the meteorological authorities and the operators concerned.
[ASIA/PAC/3, Rec. 8/16]

11. Trend forecasts should be provided at the aerodromes as indicated in FASID Table MET 1A.
[ASIA/PAC/3, Recs. 8/1 and 8/16]

12. Meteorological service should be provided on a twenty-four hour basis, except as otherwise agreed between the meteorological authority, the air traffic services (ATS) authority and the operators concerned.
[ASIA/PAC/3, Rec. 8/16]

13. At aerodromes with limited hours of operation, METAR should be issued prior to the aerodrome resuming operations to meet pre-flight and in-flight planning requirements for flights due to arrive at the aerodrome concerned as soon as it is opened for use. Furthermore, TAF should be issued with adequate periods of validity so that they cover the entire period during which the aerodrome is open for use.
[ASIA/PAC/3, Rec. 8/16]

14. When a meteorological watch office (MWO) is temporarily not functioning or is not able to meet all its obligations, its responsibilities should be transferred to another MWO and a NOTAM should be issued to indicate such a transfer and the period during which the office is unable to fulfil all its obligations.
[ASIA/PAC/3, Rec. 8/16]

15. Details of the service provided should be indicated in the Aeronautical Information Publication (AIP) in accordance with the provisions of Annex 15.
[ASIA/PAC/3, Rec. 8/16]

16. As far as possible, English should be among the languages used in meteorological briefing and consultation.
[ASIA/PAC/3, Rec. 8/16]

17. FASID Tables MET 1A and MET 1B should be implemented as soon as possible. The implementation of a new MWO or changes to the area served by existing MWO indicated in FASID Table MET 1B, should take place coincidentally with the implementation of, or changes to, the FIR/UIR/CTA/SRR concerned.
[ASIA/PAC/3, Rec. 8/16]

SIGMET AND AIRMET INFORMATION (FASID Tables MET 3A, MET 3B and MET 3C)

18. Tropical cyclone advisory centres (TCACs) Darwin, Honolulu, Miami, Nadi, New Delhi, Réunion and Tokyo have been designated to prepare advisory information. FASID Table MET 3A sets out the area of responsibility, the period(s) of operation of the TCAC(s) and the MWOs to which the advisory information should be sent.
[IAVWOPSG Conclusion 3/2]

19. Volcanic ash advisory centres (VAACs) Anchorage, Darwin, Tokyo, Toulouse, Washington and Wellington have been designated to prepare advisory information. FASID Table MET 3B sets out the area of responsibility of the VAACs, the MWOs and ACCs to which the advisory information should be sent.
[IAVWOPSG Conclusion 3/2]

20. In order for the VAACs to initiate the monitoring of volcanic ash from satellite data and the forecast of volcanic ash trajectories, MWOs should notify the relevant VAAC immediately on receipt of information that a volcanic eruption has occurred or volcanic ash has been observed in the FIR for which they are responsible. In particular, any special air-reports of pre-eruption volcanic activity, a volcanic eruption or volcanic ash cloud received by MWOs should be transmitted without delay to the VAAC concerned. Selected State volcano observatories have been designated for direct notification of significant pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash in the atmosphere to their corresponding ACC, MWO and VAAC. FASID Table MET 3C sets out the selected State volcano observatories and the VAACs, MWOs and ACCs to which the notification should be sent by the observatories.
[IAVWOPSG Conclusion 2/2]

21. AIRMET messages are not required to be issued by MWOs.
[APANPIRG/7, Conc. 7/22]

**EXCHANGE OF OPERATIONAL
METEOROLOGICAL (OPMET) INFORMATION**

(FASID Tables MET 2A, ROBEX Handbook and
Asia/Pacific OPMET data banks interface control
document)

Exchange of METAR, SPECI and TAF

22. The ROBEX Handbook set out the Regional OPMET Bulletin Exchange (ROBEX) Scheme for the collection and dissemination of METAR, SPECI, and TAF. These tables contain information regarding the designated ROBEX centres and their respective areas of responsibility.

[APANPIRG/20, Conc. 20/65]

23. The ROBEX Handbook should be updated, as necessary, by the ICAO Asia and Pacific Regional Office (Bangkok) in coordination with the ICAO Middle East Regional Office (Cairo) on the basis of changes in the pattern of aircraft operations, the Statement of Basic Operational Requirements and Planning Criteria and in consultation with those States and international organizations directly concerned.

[APANPIRG/20, Conc. 20/65]

24. Requirements for METAR, SPECI and TAF not carried on the ROBEX Scheme which should be available at meteorological offices are contained in FASID Table MET 2A. This table should be updated, as necessary, by the ICAO Regional Office on the basis of changes in the pattern of aircraft operations, the Statement of Basic Operational Requirements and Planning Criteria, and in consultation with those States and international organizations directly concerned.

[ASIA/PAC/3, Recs. 9/1 and 9/8]

25. The exchanges indicated in FASID Table MET 2A should be implemented as soon as possible, but only for those related to current aircraft operations. New exchanges should be started coincidentally with the introduction of new aircraft operations. Any changes in this respect (i.e. additional OPMET information needed or OPMET information no longer required) should be notified to the corresponding meteorological authority which, in turn, should inform the ICAO Regional Offices concerned.

[ASIA/PAC/3, Rec. 9/8]

**OPMET data banks
to support the ROBEX Scheme**

26. The OPMET data banks in Bangkok, Brisbane, Nadi, Singapore and Tokyo have been designated to support the ROBEX scheme and serve States in the ASIA/PAC regions to access OPMET information which is required but not received. The Asia/Pacific OPMET data banks interface control document sets out the responsibilities of the ASIA/PAC OPMET data banks for collection and dissemination of OPMET bulletins together with procedures to be used in communicating with the data banks to support the ROBEX Scheme. The Asia/Pacific OPMET data banks interface control document is maintained by the ICAO Asia and Pacific Regional Office (Bangkok) in coordination with the regional OPMET data banks.

[APANPIRG/20, Conc. 20/66]

**Exchange of SIGMET information
and special air-reports**

27. Each MWO should arrange for the transmission to all aerodrome meteorological offices within its associated FIR of its own SIGMET messages and relevant SIGMET messages for other FIR, as required for briefing and, where appropriate, for flight documentation.

[ASIA/PAC/3, Rec. 8/16]

28. Each MWO should arrange for the transmission to its associated ACC/FIC of SIGMET information and special air-reports received from other MWOs.

29. Special air-reports which do not warrant the issuance of a SIGMET should be disseminated by MWOs in the same way as SIGMET messages.

Note.— Details of the procedures regarding the exchange of SIGMET information required by FASID Table MET 1B are provided in the ASIA/PAC SIGMET Guide prepared by the ICAO Asia and Pacific Regional Office, Bangkok.

WORLD AREA FORECAST SYSTEM (WAFS)
(FASID Tables MET 5 and MET 6)

30. FASID Table MET 5 sets out the ASIA/PAC Regions' requirements for WAFS forecasts to be provided by WAFC London and WAFC Washington.
[WAFSOPSG Conclusion 1/2]

31. For back-up purposes, each WAFC should have the capability to produce WAFS forecasts for all the required areas of coverage.
[WAFSOPSG Conclusion 5/2]

32. WAFS forecasts should be made available by WAFC London using the satellite distribution system for information relating to air navigation (SADIS), including the Secure SADIS FTP Service, and by WAFC Washington using the WAFS Internet File Service (WIFS).
[WAFSOPSG Conclusion 7/2]

33. Each State should make the necessary arrangements to receive and make full use of operational WAFS forecasts made available by WAFC London and WAFC Washington. The lists of the authorized users of the SADIS and WIFS services in the ASIA/PAC Regions and locations of the operational VSATs and/or Internet-based services are available from the following websites:

- www.icao.int/safety/meteorology/sadisopsg/ (click "Operational Information" and then "Status of implementation of SADIS") for SADIS;
- www.aviationweather.gov/wifs/ (click: "Documents" and then "Status of implementation of WIFS listed by ICAO regions") for WIFS.

[WAFSOPSG Conclusion 7/2]

34. FASID Table MET 6 lists the primary Internet-based service (Secure SADIS FTP and/or WIFS) from which States/users in the ASIA/PAC Regions should obtain WAFS forecasts made available by WAFC London and WAFC Washington. [WAFSOPSG Conclusion 8/2]