International Civil Aviation Organization

Eight Meeting of the Communications/Navigation/Surveillance and Meteorology Sub-Group (CNS/MET/SG/8) of APANPIRG

Bangkok, Thailand, 12 – 16 July 2004

Agenda Item 9: Exchange of OPMET Information
2) Review of regional guidance documents on OPMET

NEW EDITION OF ROBEX HANDBOOK

(Presented by Secretariat)

SUMMARY

This paper presents the draft new edition of the ROBEX Handbook discussed by the OPMET/M TF/2 meeting.

1. INTRODUCTION

1.1 The meeting may recall that ROBEX Handbook is the main guidance material providing detailed procedures for OPMET exchange in the ASIA/PAC and MID ICAO regions under the ROBEX scheme. The Handbook defines the responsibilities and procedures to be followed by the ROBEX centres, as well as the content and format of the ROBEX bulletins.

1.2 ROBEX Handbook is prepared and kept up-to-date by the ICAO Office, Bangkok in coordination with ICAO Office, Cairo. The current edition of the Handbook is the 11th edition published in August 1998. Since then a number of changes in the regional and inter-regional OPMET exchanges have taken place and the Handbook should be updated accordingly.

1.3 In preparing the new edition of the ROBEX Handbook, it has been fully revised and updated. The second meeting of OPMET Management Task Force (OPMET/M TF/2) held in Bangkok from 10 to 13 February 2004, reviewed the draft and provided comments for its finalization.

1.4 The final draft of the 12th edition of ROBEX Handbook, 2004, is provided in Attachment A to this paper for review by CNS/MET SG/8 meeting.

2. DISCUSSION

2.1 The main changes introduced with the new edition of the ROBEX Handbook are briefly outlined below:

- All OPMET data types were included in the ROBEX scheme;
- METAR and TAF tables have been updated in consultation with the States;
- New tables developed for FC-TAF, SIGMET and VA and TC advisories;
- The structure of the scheme has been amended; the new structure is presented in a diagram in the 12th edition;
- Responsibilities of the ROBEX centres, RODBs and IROGs have been updated;

- Obsolete material has been removed;
- New chapters have been introduced on the management of the ROBEX scheme and the OPMET exchange.

2.2 It should be noted that some chapters of the Handbook are still under preparation. Nevertheless, the OPMET/M TF/2 meeting was of the opinion that the 12th edition should be published as soon as possible in order to assist the States in improving the procedures for OPMET exchange and consequently the availability of OPMET data from the region.

2.3 In view of the above discussion, the meeting is invited to consider the following draft conclusion:

Draft Conclusion 8/xx – 12th edition of the ROBEX Handbook

That,

a) ICAO publish the 12th edition version of the ROBEX Handbook as shown in Appendix xx to the report in accordance with the established procedures; and
b) based on the guidance provided in the 12th edition of ROBEX Handbook, States be invited to review their operational procedures for OPMET exchange and ensure that they are in full compliance with the guidance provided in the ROBEX Handbook.

Note: It is recommended that 12th edition of ROBEX Handbook be made available on the ICAO web site.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Review the draft of the 12th edition of ROBEX Handbook; and

b) Agree on the Draft Conclusion in para. 2.10.

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INTERNATIONAL CIVIL AVIATION ORGANIZATION

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ROBEX HANDBOOK

Twelfth Edition — 2004

Prepared by the ICAO Asia and Pacific Office
and Published under the Authority of the Secretary General

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1. INTRODUCTION

1.1 The Regional Operational Meteorological (OPMET) Bulletin Exchange (ROBEX) scheme was established by the MID/SEA COM/MET Regional Planning Group at its first meeting, July 1972, Bangkok. The scheme became operational in 1974 and has since been successfully serving the ASIA/PAC and MID ICAO Regions in the exchange of the required OPMET information.

1.2 ROBEX scheme was intended initially only for METAR exchange; AIREP and TAF exchanges were added to the scheme at a later stage. The operation of the ROBEX scheme included exchange of OPMET bulletins between the originating tributary offices (TO) and the bulletin compiling centres, which, according to their functions and responsibilities, were classified as Main Collection Centres (MCC) or Sub-collection Centres (SCC), or TAF Collection Centres (TCC). The operational exchange has been carried out according to agreed transmission schedules; the bulletin contents were specified in the ROBEX Handbook.

1.3 Based on COM facilities of very limited capacity in the early seventies, the ROBEX scheme was strictly planned to accommodate only those OPMET exchanges considered vital for the flight operations. Over the years, the COM facilities have been improving considerably and the ROBEX scheme has been developing accordingly.

1.4 Recently, it has been identified that significant changes in the scheme were needed in order to make it compatible with the existing COM environment and satisfy the evolving user requirements. In view of this, APANPIRG adopted conclusions that called for further development of the ROBEX scheme according to the new operational requirements.

1.5 The ROBEX Handbook is the main guidance material providing detail on the procedures for OPMET exchange under the ROBEX scheme. The Handbook defines the responsibilities of the ROBEX centres and the procedures to be followed. It defines also the content and format of the ROBEX bulletins.

1.6 The ROBEX Handbook is prepared and kept up-to-date by the ICAO Office, Bangkok in coordination with ICAO Office, Cairo.

2. ROBEX SCHEME – GENERAL

2.1 Objective

2.1.1 The main purpose of the Regional Operational Meteorological (OPMET) Bulletin Exchange (ROBEX) Scheme is to:

- ensure **the most efficient exchange of OPMET information within the ASIA/PAC and MID Regions as well as with the other ICAO regions** to meet the requirements by the users of OPMET information; and

- ensure the implementation of the OPMET-related SARPs in Annex 3 and Annex 10, and the relevant provisions of the ASIA/PAC and MID Air Navigation Plans (ANP) in a highly efficient and standardized way.

2.2 Structure

2.2.1 The above objective is achieved by implementing a number of ROBEX collecting and disseminating centres (ROBEX centres), regional OPMET data banks (RODB), and inter-regional OPMET gateways (IROG). All these operational units form the **ROBEX scheme**. In order to ensure seamless global exchange of the required OPMET information the ROBEX scheme should be developed in compliance with similar structure in the other ICAO regions, as well as with the systems for satellite broadcast of OPMET data.

2.3 Products

2.3.1 The ROBEX scheme produces and delivers to the aviation users the required OPMET information in the form of predefined **bulletins**. The scheme should handle all types of OPMET information in alphanumeric bulletin form and should provide facilities and services for scheduled and non-scheduled delivery of OPMET information to the users.

2.4 Management

2.4.1 Monitoring of the OPMET exchange under the ROBEX Scheme, planning for improvements and preparation of proposals for any changes of the Scheme, that may become necessary, are carried out by the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG) and the Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG). In order to achieve these tasks, the ROBEX implementation status and planning is part of the agenda of the CNS/MET sub-groups of the two PIRGs.

Note: When necessary, supplementary expert groups can be established by the PIRGs or the CNS/MET Sub-groups to deal with OPMET specific issues. The OPMET Management Task Force, established by APANPIRG/13 is currently tasked to deal with all OPMET related issues in the ASIA/PAC region.

2.4.2 Any proposals for amendments to the ROBEX scheme, which States or international organizations concerned consider necessary, due to changes in the operational requirements for OPMET data or to developments of the AFS system, should be forwarded for consideration by the ICAO Asia and Pacific Office, Bangkok and/or the ICAO Middle East Office, Cairo.

Documentation

2.4.3 The ROBEX Handbook is the main guidance material related to the ROBEX scheme. It should be kept up-to-date by the ICAO Asia and Pacific Office, Bangkok in coordination with the ICAO Middle East Office, Cairo.

2.4.4 The RODB Interface Control Document (ICD) is a supplementary document, which provides users with guidance on the interrogation procedures and the content of the RODBs. This document at present covers only ASIA/PAC Region since no OPMET data banks have been established yet for the MID Region. The ICD should also be kept up-to date by the ICAO Asia and Pacific Office, Bangkok.

3 OPMET INFORMATION AND OPMET EXCHANGES

3.1 OPMET data types

3.1.1 The following OPMET data types should be handled by the ROBEX scheme:

Data type	Abbreviated name	WMO data type designator
Aerodrome reports	METAR SPECI	SA SP
Aerodrome forecasts	TAF: 18 and 24-hour 9 and 12 hour	FT FC
SIGMET information	SIGMET SIGMET for TC SIGMET for VA	WS WC WV
Volcanic ash and tropical cyclone advisories	VAA TCA	FV FK
Air-reports	AIREP AIREP SPECIAL (ARS)	UA
Administrative	ADMIN	NO

3.2 OPMET bulletins

3.2.1 The exchange of OPMET data is carried out through bulletins containing one or more meteorological messages (METAR, SPECI, TAF or other OPMET information). An OPMET bulletin contains messages of the same type.

3.2.2 The format of OPMET bulletins is determined by:

- ICAO Annex 10, Aeronautical telecommunications, as regards the AFTN envelope of the bulletin;
- WMO Manual on the Global telecommunication System, WMO-No.386, as regards the WMO abbreviated heading of the bulletin;
- ICAO Annex 3 and WMO-No.306, Manual on Codes, as regards the format and coding of the information included in the bulletin.

3.3 Types of OPMET exchange

3.3.1 ***Regional exchange – ROBEX scheme***

3.3.1.1 The ROBEX scheme covers the exchange of OPMET information in the ASIA, PAC and MID ICAO regions. It includes several types of exchanges as described below.

3.3.1.1.1 *Regular Exchange under ROBEX*. This is a scheduled exchange that encompasses collection of messages from the originating stations, compiling of bulletins and their dissemination according to predetermined distribution schemes. The collection and distribution is carried out at fixed times and the bulletin content is defined in the current Handbook.

Note: Five or more flights per week is considered the criterion warranting regular exchanges of METAR and TAF bulletins. A new requirement by the airlines is that all aerodromes listed in the AOP Table of the regional ANPs should be included in the regular exchange of METAR and TAF.

3.3.1.1.2 Non-regular exchange. This includes:

a) *Exchange on request (request-reply service)*. The RODBs store OPMET data and make them available on request.

b) *Exchange of non-routine reports:* SPECI; TAF AMD; SIGMET; TCA and VCA; ADMIN messages.

3.3.2 ***Inter-regional OPMET exchange***

3.3.2.1 The exchange of OPMET data between the ASIA/PAC, MID and the other ICAO Regions is carried out via designated centres, which serve as Inter-regional OPMET Gateways (IROG). An IROG is set up for sending/receiving specified OPMET data between ASIA/PAC and every other ICAO region for which ASIA/PAC OPMET data are required.

Note: The former name of these centres is ODREP.

3.3.2.2 The inter-regional OPMET exchange via IROGs is carried out through the ground segment of the AFS (currently, through the AFTN).

3.3.3 ***Exchange of OPMET information through the satellite segment of the AFS***

3.3.3.1 The three satellite broadcasts provided by the United Kingdom (Satellite Distribution System for Aeronautical Information Relating to Air Navigation - SADIS) and the United States (International Satellite Communication System – ISCS/1 and ISCS/2), form another type of OPMET exchange, which is global in nature and is intended to cover the emerging requirement for global access to all available OPMET data.

3.3.3.2 All ASIA/PAC and MID OPMET data handled by the ROBEX scheme should be relayed to the SADIS and ISCS service providers for uplink through SADIS and ISCS.

3.3.4 ***Other OPMET exchanges***

3.3.4.1 Where OPMET exchanges described in the above paragraphs are not sufficient, direct AFTN addressing should be utilized by the originating centres or NOCs to fulfill the requirements set by ASIA/PAC FASID Table MET 2 and/or MID FASID Table MET 2.

4 COMPOSITION OF ROBEX

4.1 ROBEX scheme involves a number of aeronautical meteorological stations, aeronautical telecommunication stations, aerodrome meteorological offices and other operational units. The following operational units should be considered as components of the ROBEX scheme:

4.1.1 ***Originating station*** – an aeronautical meteorological station or an aerodrome meteorological office, or a forecasting office, or a MWO, or a TCAC, or a VAAC. The duties and responsibilities of these originating stations should be defined by the State's meteorological authority.

4.1.2 ***National OPMET center (NOC).*** Normally, a NOC is associated with the State's national AFTN centre/switch. The role of the NOC is to collect all OPMET messages generated by the originating stations in the State and to send them to the responsible ROBEX bulletin compiling center (ROBEX BCC). Some NOCs serve also as ROBEX BCCs. National regulations should be developed to ensure that NOCs disseminate the international OPMET data within their own State, as necessary.

4.1.3 ***ROBEX bulletin compiling centre (ROBEX BCC or, in brief, ROBEX centre).***

4.1.3.1 ROBEX centres are responsible for collection of OPMET messages from the originating stations or NOCs in their area of responsibility and for compiling these messages into ROBEX bulletins. FASID Tables MET 4A and MET 4B determine the areas of responsibility (or, collection areas) of the ROBEX centres for METAR/SPECI and AIREP, and TAF, respectively.

4.1.3.2 The ROBEX centres are responsible for the transmission of the bulletins compiled by them to:

- other ROBEX centres, according to predefined distribution lists, specific for each bulletin;
- ASIA/PAC RODBs;
- NOCs or other COM or MET offices in the States in their area of responsibilities, as agreed between the ROBEX centre and the States' authorities concerned.

Note: The former ROBEX scheme involved separate compiling centres for METAR and TAF (METAR Collection Centres MCC, and TAF Collection Centres – TCC). In some cases, METAR from an aerodrome was compiled by one center (MCC), and the TAF from another center (TCC). The evolution of ROBEX should be towards unified ROBEX centers responsible for collecting/distributing of all OPMET data types within their area of responsibility.

4.1.4 ***Regional OPMET Data Banks (RODB)***

4.1.4.1 Five centres have been designated by APANPIRG (APANPIRG Conclusions 4/35 and 5/21 (1994)), to serve as Regional OPMET Data Banks: Bangkok, Brisbane, Nadi, Singapore and Tokyo. FASID Table MET 4C reflects the requirements for the operation of the ASIA/PAC OPMET data banks to support the ROBEX Scheme.

4.1.4.2 The **main responsibilities** of the RODBs are defined, as follows:

- to support the ROBEX Scheme and to facilitate a regular exchange of OPMET information based on predetermined distribution within the ASIA/PAC Regions;

- to operate as Inter-regional OPMET Gateway (IROG) with responsibility of exchanging OPMET information between ASIA/PAC Region and the adjacent Regions; and

- to provide facilities for request/response type of access to the stored OPMET data for users to obtain non-regular or occasional information.

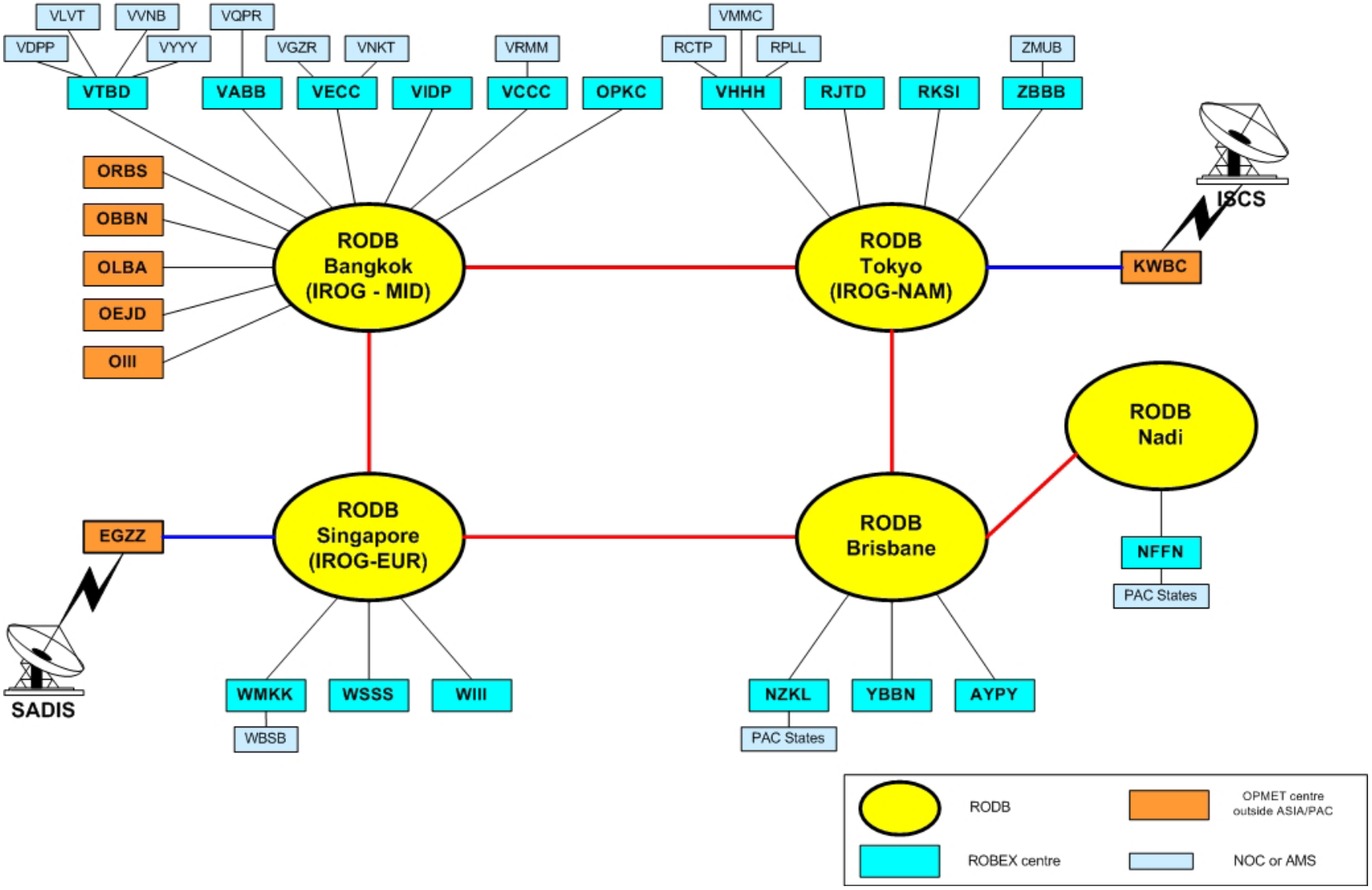
Note. — The interrogation procedures applicable to the OPMET data banks and catalogues are provided in the "ASIA/PAC Regional Interface Control Document (ICD) - OPMET Data Bank Access Procedures"*, published and maintained by the ICAO Asia and Pacific Office, Bangkok.*

4.1.5 ***Inter-regional OPMET Gateways (IROG).*** The Inter-regional OPMET Gateways in ASIA/PAC Region are the designated RODBs. Each RODB is assigned responsibility for exchange of OPMET information with other ICAO Regions. The responsibilities of the IROGs for ASIA/PAC and MID Region are shown in p. 11.1 of this Handbook.

4.1.6 ***Support to SADIS and ISCS satellite broadcasts.*** The RODBs and IROGs should facilitate the global exchange of OPMET data carried out through the SADIS and ISCS satellite broadcasts. In order to achieve this, close liaison should be maintained between the IROGs and the corresponding SADIS and ISCS gateways. Availability of ASIA/PAC and MID data on SADIS and ISCS should be monitored and any systematic shortfalls of data identified should be reported to the relevant ICAO regional office.

4.2 The overall structure of the ROBEX scheme is presented in the following figure.

ROBEX SCHEME



5 COMMUNICATIONS - GENERAL

5.1 According to Annex 3 (cf. p. 11.1.10), "the telecommunication facilities used for the exchange of operational meteorological information should be the aeronautical fixed service". The use of AFS for the OPMET exchange encompasses two components:

- use of terrestrial AFTN circuits; and
- use of satellite distribution systems – SADIS and ISCS.

5.2 Use of AFTN

5.2.1 In the ROBEX scheme AFTN circuits are used for collection of the OPMET messages by the ROBEX centres, and for regional and inter-regional exchanges of OPMET bulletins. The access to the regional OPMET data banks (request-reply service provided by the RODBs) is also provided through the AFTN.

5.2.2 OPMET bulletins transmitted via AFTN should be encapsulated in the text part of the AFTN message format (cf. Annex 3, p. 11.1.10, 11.2.5).

5.2.3 **Transit times** of the AFTN messages and bulletins containing OPMET information should follow the requirements in p. 11.1.11 of Annex 3.

5.2.4 OPMET bulletins transmitted via AFTN should use the following **priority indicators**:

- SIGMET, AIREP SPECIAL (special air-reports), VAA, TCA and TAF AMD – priority indicator **FF** (for flight safety messages) (cf. Annex 10 Vol. II, p. 4.4.1.1.3);

- TAF, METAR and SPECI – priority indicator **GG** (meteorological messages) (cf. Annex 10 Vol. II, p. 4.4.1.1.4).

5.3 Use of SADIS and ISCS

5.3.1 SADIS and ISCS satellite broadcasts are used by the authorized users in the States for receiving global OPMET data.

5.3.2 FASID Table MET 7 of the regional plans contains a list of authorized users for SADIS and ISCS in the corresponding region.

5.4 Use of Internet

5.4.1 The MET Divisional Meeting, 2002, recommended that Internet could be used as a back up to the dedicated internationally agreed circuits for exchange of meteorological data. An internet-based ftp back-up service to the SADIS has been operational since 2002.

5.4.2 In the future, it is intended that the RODBs should also provide internet-based back-up facilities for retrieval of OPMET information.

5.5 Transition to Aeronautical Telecommunication Network (ATN)

5.6.1 In accordance with Conclusion 12/14 adopted by the Twelfth Meeting of APANPIRG held in 2001, the transition from AFTN to ground/ground element of Aeronautical Telecommunication Network (ATN) in the Asia and Pacific regions is expected to be completed by the end of 2005. The ground/ground application – AMHS, will be gradually employed to replace AFTN switches by States in the region. During the transition period, the conventional messages, exchanged through AFTN, including OPMET messages, will be continually supported by address conversion to AMHS format and vice versa. No changes would be made to the format and contents of text part of AFTN messages carried over by AMHS. Inter-regional exchanges of OPMET bulletins will be via AFTN during the transition period through AMHS/AFTN gateway.

6. METAR/SPECI EXCHANGE

6.1 General

6.1.1 Hourly METAR reports should be prepared by all international aerodromes listed in FASID Table MET 1A. METAR should be issued on half-hour intervals for those aerodromes, included in the HF VOLMET broadcasts (cf. FASID Table ATS 2 – HF Raditelephony VOLMET Broadcasts), or D-VOLMET, or on discretion by the State.

6.1.2 METARs from all international aerodromes listed in Table AOP 1 of the Basic ANP and, respectively, in FASID Table MET 1A, should be included in the regular ROBEX exchange. In addition, METARs from a number of domestic aerodromes, required by the users, should also be included in the regular ROBEX exchange, if so agreed by the States concerned.

Note: SADIS User Guide (SUG) Annex 1 presents the requirements for OPMET data (METAR and TAF) by aviation users. When OPMET data from domestic airports (so called non-AOP airports) is required by users, the corresponding State is consulted on its agreement for providing this additional information. If the information is available and the State agrees to include it in the exchange, the additional airports are included in SUG Annex 1 and the State should provide the additional OPMET information on a continuous basis.

6.1.3 Description of the ASIA/PAC and MID METAR bulletins included in the regular ROBEX exchange, containing the responsible compiling ROBEX centre, WMO bulletin identification, and the list of the aerodromes forming the bulletin content, is given in Appendix A.

6.1.4 The official hour of observation to be included in the METAR bulletin heading is indicated in the table in Appendix A.

6.1.5 All METAR bulletins should be sent to the following RODBs: Bangkok, Brisbane, Singapore and Tokyo. ROBEX centres should exchange METAR bulletins according to the distribution lists given in Appendix A.

6.1.6 SPECI reports should be disseminated in the same way as the METAR reports originated by the same aerodrome.

6.1.7 Exchange of METAR/SPECI messages outside ROBEX scheme, if necessary to meet requirements set in FASID Table MET 2, should be carried out by direct AFTN addressed messages.

6.2 Responsibilities of originating stations and NOCs

6.2.1 The originating stations (aeronautical meteorological stations) and/or NOCs should prepare METAR messages for the observation times indicated in Appendix A and send them to their responsible ROBEX center.

6.2.2 SPECI messages should be prepared between the regular observation times, following the requirements set in Annex 3 and the established national procedures, and sent with no delay to the responsible ROBEX centre.

6.2.3 In preparing METAR and SPECI messages the originating stations should follow strictly the WMO METAR and SPECI code forms (FM 15-XII METAR and FM 16-XII SPECI,

WMO – No. 306, *Manual on Codes*, Volume I.1, Part A – *Alphanumeric Codes*), and Annex 3, Chapter 4, and Appendix 2, *Technical specifications for local routine reports, local special reports and reports in the METAR/SPECI code forms*.

6.2.4 METAR messages should be sent to the responsible ROBEX centre before the cut-off time specified by the ROBEX centre, to allow for timely compilation of the METAR bulletin. If, for some reason, a METAR message has not been sent before the cut-off time, the originating station/NOC should send it as soon as possible after that, as a **delayed message**. The originating stations/NOCs should follow strictly the schedules specified for METAR messages and keep to a minimum the number of delayed messages.

6.2.5 METAR and SPECI messages should be quality controlled by the originating stations/NOCs and, when necessary, a corrected message should be sent immediately after an error in an already transmitted message had been identified.

Note: Procedures applying to the corrected and delayed messages are given in Appendix F.

6.3 Responsibilities of ROBEX centres

6.3.1 ROBEX centres should collect METAR messages from the aerodromes in their area of responsibility and compile METAR bulletins, according to Appendix A. The content of bulletins and the order of stations in each bulletin should be kept fixed until a bulletin change is requested and coordinated according to the established procedure.

6.3.2 ROBEX centers should determine a cut-off time for the reception of METARs from the stations in their area of responsibility. At the cut-off time, the ROBEX centre should compile METAR bulletin(s) containing all prescribed aerodromes, indicating any missing METAR with “NIL”.

6.3.3 At scheduled transmission times ROBEX centres should transmit the compiled METAR bulletins to other ROBEX centres and RODBs according to the distribution lists specified for each METAR bulletin in Appendix A. METAR bulletins should be filed for transmission not later than 5 minutes after the observation time.

6.3.4 ROBEX centres should transmit the METAR bulletins compiled by them, as well as bulletins received from other ROBEX centres, as necessary, to the NOCs and/or other offices in the States in their area of responsibility, as agreed between the ROBEX centre and the meteorological authorities of the States concerned.

6.3.5 A SPECI report when received by a ROBEX centre should be sent as a SPECI bulletin to the same addresses, to which METAR reports from the issuing aerodrome are sent. Normally, a SPECI bulletin should contain a single SPECI message.

6.3.6 The WMO heading of a SPECI bulletin should be constructed in the same way as the WMO heading of the METAR bulletin, which contains the aerodrome, for which the SPECI is issued, by using SP data type designator instead of SA.

6.3.7 A METAR message received by the ROBEX centre after the scheduled transmission of the corresponding bulletin is a delayed METAR. The ROBEX centre should send a delayed bulletin as soon as one or more delayed messages are received or at specified times after the scheduled bulletin time (e.g., the first delayed bulletin (RRA) issued 10

minutes after the regular time; the second delayed bulletin (RRB) issued 20 minutes after the regular time, etc.).

6.3.8 As soon as a corrected METAR or SPECI message is received from a station the ROBEX centre should transmit it as a corrected bulletin to all recipients.

6.4 Format and content of METAR bulletins

6.4.1 Each METAR message in a METAR bulletin should start with the code word METAR followed by the ICAO location indicator (CCCC) of the aerodrome and the date/time group (YYGGggZ), indicating the official time of observation. Corrected METAR messages, should start with METAR COR.

6.4.2 The following is an example of the format to be applied in preparing a METAR bulletin by the ROBEX centre:

Parts of Message	**ROBEX SA Bulletin**
AFTN header	
Priority Indicator and Address	GG VTBBYPYX
Date and Time of filing and Originator	271304 ZBBBYPYX
WMO Abbreviated Heading	SACI31 ZBBB 271300
METAR messages	METAR ZBAA 271300Z ..……. = METAR ZBTJ 271300Z …….= …..
AFTN Normal Ending	NNNN

Note: The inclusion of the code name METAR in front of each message in the METAR bulletin becomes a standard from the applicability date of Amendment 73 of Annex 3.

6.4.2 The rules related to the use of the BBB group in the WMO abbreviated heading, in regard to delayed or corrected bulletins, are given in Appendix F.

6.4.3 For METARs, which are not available at the time of compilation of the bulletin, the code word NIL should be inserted following the date/time group indicating the time of the observation.

Example: METAR ZBTJ 271200Z NIL=

6.5 Format and content of SPECI bulletins

6.5.1 A SPECI message included in a SPECI bulletin should start with the code word SPECI followed by the ICAO location indicator (CCCC) of the aerodrome and a date/time group (YYGGggZ) indicating the time of the observation of the meteorological conditions for which the SPECI is issued. Corrected SPECI messages, should start with SPECI COR.

6.5.2 The following is an example of the format to be applied in preparing a SPECI bulletin by the ROBEX centre:

Parts of Message	**ROBEX SP Bulletin**
AFTN header	
Priority Indicator and Address	GG VTBBYPYX
Date and Time of filing and Originator	081647 ZBBBYPYX
WMO Abbreviated Heading	SPCI31 ZBBB 081645
SPECI message	SPECI ZBAA 081645Z ..…… =
AFTN Normal Ending	NNNN

7. TAF EXCHANGE

7.1 General

7.1.1 Terminal aerodrome forecast (TAF) should be prepared by the aerodrome meteorological offices (AMO) or other meteorological offices, designated for provision of TAF by the State's meteorological authority, for all international aerodromes, for which TAF is required according to FASID Table MET 1A of ASIA/PAC and MID ANPs.

7.1.2 Requirements for TAF for international aerodromes are given in FASID Table MET 1A. All TAFs required should be included in the regular ROBEX exchange. In addition, TAFs from a number of other, including domestic aerodromes, required by the users, should also be included in the regular ROBEX exchange, if so agreed by the States concerned.

Notes: 1) The recent requirement by airlines is that TAF for all international aerodromes listed in ASIA/PAC and MID FASID Table MET 1A should be available through regular exchange and through the satellite distribution systems SADIS and ISCS.
2) See the note under p. 6.1.2

7.1.3 TAF exchanges not covered by the ROBEX Scheme, but required operationally, as indicated in Table MET 2 of the ASIAPAC and MID ANP, should be met by means of direct addressed AFTN messages.

7.1.4 The requirements for the exchange of 18 or 24-hour TAFs (so called "long" TAFs with WMO data designator – FT), are set in FASID Table MET 1A of the ANP. "Short" TAFs with 9- or 12-hour period of validity (WMO data designator - FC), where issued by States in the ASIA/PAC and MID regions, should also be included in the ROBEX exchange.

7.2 Responsibilities and procedures to be followed by originating aerodrome meteorological offices (AMO) and NOCs

7.2.1 Originating AMOs (or other designated forecasting offices) should prepare the required TAF messages for the periods of validity indicated in Appendix B. TAFs should be send by the AMOs or NOCs and to the responsible ROBEX center before the cut-off time set up by this centre.

7.2.2 Aerodrome meteorological offices in preparing TAF should follow strictly the WMO TAF code form (FM 51-XII TAF, WMO – No. 306, *Manual on Codes*, Volume I.1, Part A – *Alphanumeric Codes*), and Annex 3, Chapter 6, and Appendix 4, *Technical specifications for aerodrome forecasts in the TAF code form*.

7.2.3 TAFs should be monitored by the originating AMOs and amended TAF (TAF AMD) should be issued according to the established criteria. Amended TAFs should be sent by the originating station to the responsible ROBEX centre with no delay. The optional group BBB should be used in the WMO abbreviated heading to indicate amended TAF in accordance with Appendix F.

7.2.4 TAF messages should be quality controlled by the originating meteorological offices and, when necessary, a corrected TAF (TAF COR) should be sent immediately after an error in an already transmitted message had been identified.

7.3 Responsibilities and Procedures to be followed by the ROBEX centres

7.3.1 ROBEX centres should collect TAFs from the AMOs and/or NOCs in their area of responsibility and compile TAF Bulletins according to Appendix B. The areas of responsibility, as far as practicable, should group together aerodromes and their alternates. ROBEX centres should ensure that TAFs within their area of responsibility have common periods of validity.

7.3.2 If necessary, ROBEX centres should prepare two or more separate TAF bulletins using different “ii” values (e.g., "31" and "32”) in the WMO heading. The content of the ROBEX TAF bulletins is specified in Appendix B.

7.3.3 ROBEX centres should establish a cut-off time for reception of TAFs from AMOs and/or NOCs in their area of responsibility, e.g., 15 minutes before the filing/transmission times specified in Appendix B. At the cut-of time ROBEX centres should compile TAF bulletin(s) containing all prescribed aerodromes, indicating any missing TAF with “NIL”.

7.3.4 The filing time for 18 and 24 hr TAF bulletins should be two hours before the start of the validity period; for 9 and 12 hr TAF bulletins the filing time should be not more than one hour before the start of validity period.

7.3.5 ROBEX centres should transmit the compiled TAF bulletins to other ROBEX centres and the RODBs according to the distribution lists as specified for each TAF bulletin in Appendix B.

7.3.6 ROBEX centres should transmit the TAF bulletins compiled by them, as well as TAF bulletins received from other ROBEX centres, as necessary, to the NOCs and/or other offices in the States in their area of responsibility, as agreed between the ROBEX centre and the meteorological authorities of the States concerned.

7.3.7 A TAF message received by a ROBEX centre after the scheduled transmission of the corresponding bulletin is a delayed TAF. The ROBEX centre should send a delayed TAF bulletin as soon as one or more delayed messages are received or at specified times after the scheduled bulletin time. The optional BBB group should be used in the WMO bulletin heading accordingly.

7.3.8 Amended TAF (TAF AMD) received from an AMO or NOC should be distributed with no delay as an amended TAF bulletin to all recipients in the distribution list for the TAF bulletin, to which the originating aerodrome belongs. The optional BBB group should be used in the WMO bulletin heading accordingly.

7.4 Format and content of TAF bulletins

7.4.1 Issuance and period of validity:

7.4.1.1 18 and 24 hour TAFs 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), as shown in the table below.

7.4.1.2 9 and 12 hour TAFs should be issued at intervals of three hours, with the period of validity beginning at one of the synoptic hours (00, 03, 06, 09, 12, 15, 18 and 21 UTC), as shown in the table below.

7.4.1.3 All TAFs in a ROBEX TAF bulletin should have a common period of validity. It is not allowed to mix "long" and "short" TAFs in one bulletin.

Synoptic hours (UTC)	18-hr TAF		24-hr TAF		9-hr TAF		12-hr TAF	
	Period of validity	Filing time	Period of validity	Filing time	Period of validity	Filing time	Period of validity	Filing time
00	00-18	22 (-1)*	00-24	22 (-1)	00-09	23 (-1)	00-12	23 (-1)
03					03-12	02	03-15	02
06	06-24	04	06-06	04	06-15	05	06-18	05
09					09-18	08	09-21	08
12	12-06	10	12-12	10	12-21	11	12-24	11
15					15-24	14	15-03	14
18	18-12	16	18-18	16	18-03	17	18-06	17
21					21-06	20	21-09	20

**Note: "-1" indicates the previous day*

7.4.2 Each TAF message in a TAF bulletin should start with the code word TAF followed by the ICAO location indicator (CCCC) of the aerodrome and the date/time group (YYGGggZ), indicating the official time of issuance. Corrected METAR messages, should start with TAF COR. Amended forecasts should start with TAF AMD.

7.4.3 The use of the BBB group in the WMO heading for delayed, corrected, or amended TAFs is described in Appendix F.

7.4.4 The following is an outline of the format to be applied by a ROBEX centre in preparing a TAF bulletin, containing "long" TAFs (18 or 24 hr) :

Parts of Message	**ROBEX FT Bulletin**
AFTN header	
Priority Indicator and Address	GG YBBBYPYX
Date and Time of filing and Originator	271004 ZBBBYPYX
WMO Abbreviated Heading	FTCI31 ZBBB 271000
TAF messages	TAF ZBAA 271000Z 271212.....= TAF ZBTJ 271000Z 271212.....= .....
AFTN Normal Ending	NNNN

7.4.5 The following is an outline of the format to be applied by a ROBEX centre in preparing a TAF bulletin, containing "short" TAFs (9 or 12 hr):

Parts of Message	**ROBEX FC Bulletin**
AFTN header	
Priority Indicator and Address	GG YBBBYPYX
Date and Time of filing and Originator	271004 ZBBBYPYX
WMO Abbreviated Heading	FCCI31 ZBBB 271100
TAF messages	TAF ZBAA 271100Z 271221.….= TAF ZBTJ 271100Z 271221…….= …..
AFTN Normal Ending	NNNN

7.4.6 A missing TAF in a TAF bulletin should be indicated with “NIL”, as shown in the following example:

TAF VTBD 281000Z NIL=

7.4.7 A cancelled TAF in a TAF bulletin should be indicated with “CNL”, as shown in the following example:

TAF VTBD 281000Z 281212 CNL=

8 EXCHANGE OF SIGMET AND ADVISORIES

8.1 SIGMET should be prepared by the meteorological watch offices (MWO) designated by the State's meteorological authority. The MWOs and their areas of responsibility are given in the FASID Table MET 1B of ASIA/PAC and MID ANPs.

8.2 SIGMET messages should be distributed to all RODBs, either directly or through the responsible ROBEX centre. The RODBs should make SIGMET messages available on request. In order to facilitate that, the originating MWOs should use fixed WMO headings for their SIGMET bulletins as given in Appendix E.

Note: The required distribution of SIGMET to MWOs and ACCs in the adjacent FIRs as described in the ASIA/PAC Regional SIGMET Guide (third edition, 2003, para. 3.5.3) is not part of the ROBEX exchange and should be arranged by the States outside the ROBEX scheme.

8.3 SIGMET messages should be distributed to other ICAO regions and made available for uplink through SADIS and ISCS. This distribution should be carried out through the relevant IROGs.

8.4 Detailed information on the format of the SIGMET messages is provided in the *ASIA/PAC Regional SIGMET Guide*, third edition, 2003.

8.5 Tropical cyclone advisories (TCA) and volcanic ash advisories (VAA) should be issued by the designated tropical cyclone and volcanic ash advisory centres (TCAC and VAAC), as indicated in the FASID Table MET 3A and MET 3B.

8.6 The TCACs and VAACs should send the advisories to the RODBs. The RODBs should make TCAs and VAAs messages available on request. In order to facilitate that, the originating TCACs and VAACs should use fixed WMO headings for their TCA and VAA bulletins as given in Appendix F.

8.7 VAA and TCA messages should be distributed to other ICAO regions and made available for uplink through SADIS and ISCS. This distribution should be carried out either directly by the VAACs and TCACs or through the relevant IROGs.

9 AIREP EXCHANGE

9.1 The meteorological watch offices (MWO) are responsible for collection through their associated ATS units of routine and special air-reports (AIREP and AIREP SPECIAL) received from aircrafts within their FIR or CTA.

9.2 MWOs should collect all air-reports and prepare one-hour collectives in the form of a UA bulletin for transmission to the responsible ROBEX centre at the time specified by the ROBEX centre.

Notes: *1) The transmission of air-reports to the WAFCs as required by Annex 3 should be arranged by the meteorological authorities concerned.*

2) MWOs should follow the special requirements for the dissemination of special air-reports as defined by Annex 3,

9.2 Each ROBEX centre should collect AIREP messages from the MWOs within its area of responsibility, as shown in Appendix D. A cut-off time for the reception of AIREPs at the ROBEX centre from MWOs should be determined to allow for prteparation of the hourly AIREP bulletins.

9.3 ROBEX centres should compile hourly AIREP bulletins containing all air-reports received from the MWOs in their area of responsibility during the preceding hour. AIREP bulletins should be disseminated to the RODBs and other ROBEX centres, as indicated in Appendix D.

9.4 If no AIREPs are received at the bulletin compilation time, AIREP bulletin should not be prepared (there is no need for a "NIL" message).

9.5 ROBEX centres should distribute their own AIREP bulletins and those received from other ROBEX centres to the aeronautical meteorological offices in the area of responsibility as agreed with the meteorological authorities concerned.

9.6 The correction procedure is also applicable to AIREP bulletins.

9.7 Examples of AIREP ROBEX bulletin is given below:

302350 YBBBZEZX
UAAU31 YBBN 302350
VHFNY KAGUX 2256 F350 ROSEY 2322 MS47 245/65=
ANZ123 MIKEL 2325 F360 GEMAC 0012 MS60 193/44=
PAO855 OLREL 2250 F380 MAGDA 2343 180/68 MS66=
PBI42 PLUGA 2320 F390 SASRO 0020 MS66 160/40=
ANZ123 SASRO 2249 F360 MIKEL 2325 MS60 188/80=

Note: In the example above the positions of the aircrafts is given by reference to ATS reporting points. According to Annex 3, p. 5.9.8, the MWOs should convert the position into latitude/longitude before disseminating the air-report.

210014 RJAAYPYX
UAFE31 RJTD 210000
JAL601 4144N 14813E 2312 F340 MS39 280/65=
JAL640 4144N 14813E 2322 F320 MS33 270/65=
FDX87 4900N 16001E 2321 F380 MS55 320/47=
NWA907 4223N 14729E 2328 F360 MS47 265/60=
NCA103 4223N 14729E 2330 F370 MS47 275/55=
FDX79 4144N 14813E 2341 F340 MS40 280/60=
JAL606 4144N 14813E 0002 F360 MS44 280/65=
NWA78 2100N 14259E 0006 F360 MS46 050/37KT=
NWA912 2835N 13349E 0011 F290 MS25 230/15KT=

10 REGIONAL OPMET DATA BANKS (RODB)

10.1 The ASIA/PAC Regional OPMET Data Banks and the AFTN addresses to be used for direct access to the banks are shown below:

RODB	AFTN ADDRESS	ROBEX CENTRES IN THE AREA OF RESPONSIBILITY
Bangkok	VTBBYZYX	Bangkok/VTBB Calcutta/VECC Colombo/VCCC Delhi/VIDP Karachi/OPKC Mumbai/VABB Baghdad/ORBS Bahrain/OBBN Beirut/OLBA Jeddah/OEJD Tehran/OIII
Brisbane	YBBBYZYX	Brisbane/YBBN Port Moresby/AYPY Wellington/NZKL
Nadi	NFFNYZYX	Nadi/NFFN
Singapore	WSSSYZYX	Jakarta/WIII Kuala Lumpur/WMKK Singapore/WSSS
Tokyo	RJTDYZYX	Beijing/ZBBB Hong Kong/VHHH Seoul/RKSI Tokyo/RJTD

10.2 **Responsibilities:**

10.2.1 Collect OPMET bulletins from the ROBEX centres in the area of responsibility and store them in a data base.

10.2.2 Handle all type of OPMET bulletins, as described in p. 3.1.1.

10.2.3 Provide facilities for “request-reply” service to the authorized users.

10.2.4 Maintain catalogue of bulletins and introduce changes to the bulletins when necessary and according to the established procedures.

10.2.5 Quality control the incoming bulletins and inform the ROBEX centres on any deficiencies.

10.2.6 Monitor the OPMET traffic by carrying out regular tests on the availability and timeliness of the bulletins; report to the ICAO Regional Office on the results.

10.3 The interrogation procedures applicable to the designated RODBs and the OPMET information stored are presented in the ASIA/PAC Regional Interface Control Document (ICD) for OPMET Data Access Procedures.

10.4 Guidance on the management and quality control is provided in chapter 12 of this Handbook.

11 INTER-REGIONAL OPMET EXCHANGE

11.1 Inter-regional OPMET Gateways (IROG) are designated in the MID and ASIA/PAC Regions for the purpose of exchanging OPMET data between MID and ASIA/PAC and the other ICAO Regions, as shown in the table below.

ROBEX IROG	**For exchange of OPMET data between Regions**
Beirut	MID and EUR
Jeddah	MID and AFI MID and ASIA/PAC
Bangkok	ASIA/PAC and MID ASIA and AFI
Brisbane	ASIA/PAC and SAM PAC and AFI
Nadi	S.PAC and NAM
Singapore	ASIA/PAC and EUR
Tokyo	ASIA/PAC and NAM

11.2 IROGs should arrange for relaying all ROBEX bulletins to a corresponding OPMET Gateway in the other ICAO regions concerned. In particular:

11.2.1 *Bangkok IROG* should relay all ASIA/PAC bulletins to … IROG in MID Region, and should receive and store all required OPMET bulletins from MID Region.

11.2.2 *Singapore IROG* should relay all ASIA/PAC bulletins to London at EUR Region, and should receive and store all required OPMET bulletins from EUR Region.

11.2.3 *Tokyo IROG* should relay all ASIA/PAC bulletins to Washington at NAM Region, and should receive and store all required OPMET bulletins from NAM Region.

11.4 The following principles are applied to IROGs:

a) IROGs should have reliable and efficient AFTN connection to the regions, for which they have exchange responsibilities, with adequate capacity to handle the OPMET data flow between the regions;

b) IROGs should be associated with AFTN relay centres capable of handling efficiently the volume of traffic anticipated;

c) IROGs should be capable of handling all OPMET data types, as described in p.3.1.1.

11.5 In order to avoid duplication of the OPMET traffic and information, all inter-regional OPMET exchange should be directed through the IROGs, and direct addressing from the

originator or ROBEX centre to recipients in the other ICAO Regions should be avoided, except when bilateral or other agreements require such direct exchanges.

12 MANAGEMENT OF OPMET EXCHANGE UNDER THE ROBEX SCHEME

12.1 OPMET bulletins management

TO BE DEVELOPED

12.2 Quality control

TO BE DEVELOPED

12.3 ROBEX Focal Points

12.3.1 In order to facilitate exchange of information between the ROBEX centres a system of ROBEX focal points have been developed. A list of the persons designated as ROBEX focal points by the relevant State's authorities, together with their details for correspondence, is provided in Appendix xx.

APPENDIX A

ROBEX TABLES

Table 1. ROBEX Collection and Dissemination of METAR Bulletins

Explanation of Table

Col. 1: Name and ICAO location indicator of the ROBEX Centre compiling the bulletin.

Col. 2: Description of the METAR Bulletin

Col. 3: Official observation time of the bulletin

Col. 4: Distribution of the bulletin to other ROBEX centres and RODBs
Note: The RODB responsible for storing the bulletin is in ***bold***

Aerodromes with shaded text are included in the HF VOLMET Broadcast

Table 1. ROBEX Collection and Dissemination of METAR Bulletins

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
ASIA/PAC REGION							
Bangkok	VTBD	**SAAS31**	VTBD	BANGKOK/Bangkok Intl	HH +30	**BANGKOK**	VTBBYPYX
			VTCC	CHIANG MAI/Chiang Mai Intl	(HH +00)	BRISBANE	YBZZSQJX
			VTBU	RAYONG/U-Tapao Intl		SINGAPORE	WSZZYPYM
			VTSS	SONGKHLA/Hat Yai Intl		TOKYO	RJAAYPYX
			VTSP	PHUKET/Phuket Intl		Calcutta	VECCYPYX
			VLVT	VIENTIANE/Wattay		Colombo	VCCCYPYX
			VYMD	MANDALAY/Mandalay		Delhi	VIDPYPYX
			VYYY	YANGON/ Yangon Intl		Hong Kong	VHZZYPYX
			VVTS	HO-CHI-MINH/Tan-Son Nhat		Jakarta	WIZZMCMC
			VVNB	HANOI/Noibai		Kuala Lumpur	WMZZYPYR
			VVDN	DANANG/Danang		Mumbai	VABBYPYX
			VDPP	PHNOM PENH/Pochentong		Incheon	RKSIYPYX
			VDSR	SIEM REAP/Siem Reap			
Beijing	ZBBB	**SACI31**	ZBAA	BEIJING/Capital	HH + 00	BANGKOK	VTBBYPYX
			ZBTJ	TIANJING/Binhai	(HH + 30)	BRISBANE	YBZZSQJX
			ZBYN	TAIYUAN/Wusu		SINGAPORE	WSZZYPYM
			ZGGG	GUANGZHOU/Baiyun		**TOKYO**	RJAAYPYX
			ZSHC	HANGZHOU/Xiaoshan		Hong Kong	VHZZYPYX
			ZSPD	SHANGHAI/Pudong		Jakarta	WIZZMZBB
			ZSSS	SHANGHAI/Hongqiao		Karachi	OPZZYPYX
			ZWWW	URUMQI/Diwopu		Mumbai	VABBYPYX
			ZYTL	DALIAN/Zhoushuzi		Incheon	RKSIYPYX
			ZYTX	SHENYANG/Taoxian		Ulan Bator	ZMUBYMYX
		SACI32	ZGKL	GUILIN/Liangjang	HH + 00	BANGKOK	VTBBYPYX
			ZGNN	NANNING/Wuxu		BRISBANE	YBZZSQJX
			ZGOW	SHANTOU/Shantou		SINGAPORE	WSZZYPYM
			ZGSZ	SHENZHEN/Baoan		**TOKYO**	RJAAYPYX
			ZLXY	XIAN/Xianyang		Hong Kong	VHZZYPYX
			ZMUB	ULAANBAATOR/Bryant-Ukhaa		Jakarta	WIZZMZBB
			ZPPP	KUNMING/Wujiaba		Kuala Lumpur	WMZZYPYX
			ZSAM	XIAMEN/Gaoqi		Incheon	RKSIYPYX
			ZSQD	QINGDAO/Liuting		Wellington	NZZZYPYX
			ZUUU	CHENGDU/Shuangliu			

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
		SACI41	ZBHH	HOHHOT/Baita	HH + 00	BANGKOK	VTBBYPYX
			ZGHA	CHANGSHA/Huanghua		BRISBANE	YBZZSQJX
			ZHHH	WUHAN/Tianhe		SINGAPORE	WSZZYPYM
			ZJHK	HAIKOU/Meilan		**TOKYO**	RJAAYPYX
			ZJSY	SANYA/Fenghuang		Hong Kong	VHZZYPYX
			ZLLL	LANZHOU/Zhongchuan		Jakarta	WIZZMZBB
			ZSNJ	NANJING/Lukou		Karachi	OPZZYPYX
			ZSOF	HEFEI/Luogang		Mumbai	VABBYPYX
			ZUCK	CHONGQING/Jiangbei		Incheon	RKSIYPYX
			ZWSH	KASHI		Ulan Bator	ZMUBYMYX
			ZYCC	CHANGCHUN/Dafangshen		Wellington	NZZZYPYX
			ZYHB	HARBIN/Yanjiangang			
Brisbane	YBBN	**SAAU31**	YSSY	SYDNEY/Kingsford Smith Intl	HH + 00	BANGKOK	VTBBYPYX
			YMML	MELBOURNE/Melbourne Intl	(HH + 30)	**BRISBANE**	YBZZSQJX
			YBBN	BRISBANE/Brisbane		SINGAPORE	WSZZYPYM
			YPAD	ADELAIDE/Adelaide		TOKYO	RJAAYPYX
			YPDN	DARWIN/Darwin		Hong Kong	VHZZYPYX
			YPPH	PERTH/Perth int		Incheon	RKSIYPYX
			YBCS	CAIRNS/Cairns		Jakarta	WIZZMIMI
			YBAS	ALICE SPRINGS/Alice Springs		Nadi	NFFNYPYX
			YPLM	LEARMONTH/Learmonth		Port Moresby	AYPYYMYX
			YBTL	TOWNSVILLE/Townsville		Wellington	NZZZYPYX
			YPTN	TINDAL /Tindal RAAF		Bangkok	
		SAAU32	YSCB	CANBERRA/Canberra	HH + 00	BANGKOK	VTBBYPYX
			YBCG	COOLANGATTA/Coolangatta	(HH + 30)	**BRISBANE**	YBZZSQJX
			YMAV	AVALON/Avalon		SINGAPORE	WSZZYPYM
			YBRK	ROCKHAMPTON/Rockhampton		TOKYO	RJAAYPYX
			YPKG	KLAGOORLIE/Kalgoorlie		Jakarta	WIZZMIMI
			YPPD	PORT HEDLAND/Port Hedland		Nadi	NFFNYPYX
			YBRM	BROOME/Broome		Port Moresby	AYPYYMYX
			YSNF	NORFOLK ILS/Norfolk Isl		Seoul	RKSSYPYX
			YSDU	DUBBO/Dubbo		Wellington	NZZZYPYX
			YSRI	RICHMOND/Richmond		Hong Kong	VHZZYPYX
			YWLM	WILLIAMTOWN/Williamtown			
			YMLT	LAUNCESTON/Launceston			
			YMHB	HOBART/Hobart			
			YPEA	PEARCE/Pearce			

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
Colombo	VCCC	**SASB31**	VCBI	COLOMBO/Katunayake	HH +50	**BANGKOK**	VTBBYPYX
			VRMM	MALE/Male Intl	(HH + 20)	BRISBANE	YBZZSQJX
						SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Hong Kong	VHZZYPYX
						Kuala Lumpur	WMZZYPYR
						Mumbai	VABBYPYX
Delhi	VIDP	**SAIN32**	VIDP	DELHI/Indira Gandhi Intl	HH + 30	**BANGKOK**	VTBBYPYX
			VILK	LUCKNOW	(HH + 00)	BRISBANE	YBZZSQJX
			VIBN	VARANASI/Varanasi		SINGAPORE	WSZZYPYM
			VIAR	AMRITSAR/Amritsar		TOKYO	RJAAYPYX
				JAIPUR		Calcutta	VECCYPYX
						Hong Kong	VHZZYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
Hong Kong	VHHH	**SAHK31**	VHHH	HONG KONG/Hong Kong Intl	HH + 00	BANGKOK	VTBBYPYX
			RCTP	TAIBEI/Taibei Intl	(HH + 30)	BRISBANE	YBZZSQJX
			RCKH	GAOXIONG/Gaoxiong		SINGAPORE	WSZZYPYM
			RCSS	TABEI/Sungshan		**TOKYO**	RJAAYPYX
			VMMC	MACAU/Macau Intl		Beijing	ZBBBYPYX
			RPLL	MANILA/Ninoy Aquino Intl*		Guangshou	ZGGGYPYX
			RPVM	LAPU LAPU/Mactan Cebu Intl*		Kuala Lumpur	WMZZYPYR
			RPMD*	DAVAO/Francisco Bangoy Intl		Incheon	RKSIYPYX
			RPLB	SUBIC BAY/Subic Bay Intl		Wellington	NZZZYPYX
			RPLI#	LAOAG/Laoag Intl			
			RPMZ#	ZAMBOANGA/Zamboanga Intl			

Note: * Available 0000-0900 and 22002300 # Available 0000-0900

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
Jakarta	WIII	**SAID31**	WAAA	UJUNG PANDANG/Hasanuddin	HH + 00	BANGKOK	VTBBYPYX
			WABB	BIAK/Frans Kaisieppo	(HH + 30)	BRISBANE	YBZZSQJX
			WIIH	JAKARTA/Halim		**SINGAPORE**	WSZZYPYM
			WIII	JAKARTA/Soekarno-Hatta		TOKYO	RJAAYPYX
			WIKB	BATAM/Hang Nadim		Hong Kong	VHZZYPYX
			WIMM	MEDAN/Polonia		Kuala Lumpur	WMZZYPYR
			WRRR	DENPASAR*		Wellington	NZZZYPYX
			WRSJ	SURABAYA/Juanda			
		SAID32	WAMM	MANADO/Sam Ratulangi	HH + 00		
			WIBB	PEKAN BARU/Simpangtiga			
			WIKN	TANJUNG PINNAG/Kijang			
			WIMG	PADANG/Tabing			
			WIOO	PONTIANAK/Supadio			
			WIPP	PALEMBANG/Sultan Mahmud Badaruddin II			
			WRBB	BANJARMASIN/Syamsudin Noor			
			WRLL	BALIKPAPAN/Sepinggan			
			WRRA	MATARAM/Selaparang			
		SAID33	WABP	TIMIKA/Tembegapura	HH + 00		
			WAJJ	JAYAPURA/Sentani			
			WAKK	MERAUKE/Mopah			
			WAPP	AMBON/Pattimura			
			WIIS	SEMARANG/Achmad Yani			
			WIIT	BANDAR LAMPUNG/Branti			
			WRKK	KUPANG/El-Tari			
			WRLR	TARAKEN			
Kolkata	VECC	**SAAE31**	VECC	KOLKATA/Netaji Subhash Chandra Bose Intl	HH + 50	**BANGKOK**	VTBBYPYX
			VEPT	PATNA/Patna		BRISBANE	YBZZSQJX
			VGZR	DHAKA/Zia Intl		SINGAPORE	WSZZYPYM
			VGEG	CHITTAGONG/M. A. Hannan Intl		TOKYO	RJAAYPYX
			VNKT	KATHMANDU/Tribhuvan Intl		Colombo	VCCCYPYX
						Delhi	VIDPYPYX
						Hong Kong	VHZZYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX

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ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
Karachi	OPKC	**SAPK31**	OPKC	KARACHI/Quaid-E-Azam Intl	HH +50	**BANGKOK**	VTBBYPYX
			OPRN	ISLAMABAD/Chaklala	(HH +20)	BRISBANE	YBZZSQJX
			OPLA	LAHORE/Lahore		SINGAPORE	WSZZYPYM
			OPNH	NAWABSHAH		TOKYO	RJAAYPYX
			OPGD	GAWADAR		Abu Dhabi	OMZZYPYX
			OPPS	PESHAVAR		Bahrain	OBZZYPYX
						Beijing	ZBBBYPYX
						Calcutta	VECCYPYX
						Delhi	VIDDYPYX
						Hong Kong	VHZZYPYX
						Mumbai	VABBYPYX
						Tehran	OIZZYPYX
Kuala Lumpur	WMKK	**SAMS31**	WMKK	KUALA LUMPUR/Kuala Lumpur Intl	HH + 30	BANGKOK	VTBBYPYX
			WSSS	SINGAPORE/Changi	(HH + 10)	BRISBANE	YBZZSQJX
			WSAP	SINGAPORE/Paya Lebar		**SINGAPORE**	WSZZYPYM
			WMKP	PENANG/Bayan Lepas		TOKYO	RJAAYPYX
			WBKK	KOTA KINABALU/Kota Kinabalu Intl		Colombo	VCCCYPYX
			WBGG	KUCHING/Kuching		Hong Kong	VHZZYPYX
			WBSB	BANDAR SERI BEGAWAN /Brunei Intl		Jakarta	WIZZMBMB
						Manila	RPLLYPYX
						Mumbai	VABBYPYX
						Incheon	RKSIYPYX
						Wellington	NZZZYPYX
Mumbai	VABB	**SAIN31**	VABB	MUMBA/Jawaharlal Nehru Intl	HH + 40	**BANGKOK**	VTBBYPYX
			VOMM	CHENNAI/Chennai	(HH + 10)	BRISBANE	YBZZSQJX
			VOTR	TIRUCHCHIRAPPALLI		SINGAPORE	WSZZYPYM
			VOTV	TRIVANDRUM/Trivandrum Intl		TOKYO	RJAAYPYX
			VAAH	AHMADABAD/Ahmadabad		Abu Dhabi	OMZZYPYX
			VOHY	HYDERABAD		Bahrain	OBZZYPYX
			VANP	NAGPUR		Brisbane	YBZZSPVX
						Calcutta	VECCYPYX
						Colombo	VCCCYPYX
						Delhi	VIDPYPYX
						Hong Kong	VHZZYPYX
						Karachi	OPZZYPYX
						Tehran	OIZZYPYX

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ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
Nadi	NFFN						
Port Moresby	AYPY	**SAPW31**	AYPY	PORT MORESBY/Jacksons	HH + 00	BANGKOK	VTBBYPYX
			AYMD	MADANG	(HH + 30)	**BRISBANE**	YBZZSQJX
			AYWK	WEWAK		SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Beijing	ZBBBYPYX
						Hong Kong	WSZZYPYM
						Wellington	NZZZYPYX
Incheon	RKSI	**SAKO31**	RKSI	SEOUL/Incheon Intl	HH + 00	BANGKOK	VTBBYPYX
			RKSS	SEOUL/Gimpo Intl	(HH + 30)	BRISBANE	YBZZSQJX
			RKPC	JEJU/Jeju Intl		SINGAPORE	WSZZYPYM
			RKPK	BUSAN/Gimhae Intl		**TOKYO**	RJAAYPYX
			RKTU	CHEONGJU/Cheongju Intl		Beijing	ZBBBYPYX
			RKNY	YANGYANG/Yangyang Intl		Hong Kong	WSZZYPYM
			RKTN	DAEGU/Daegu Intl		Singapore	WSZZYPYM
						Tokyo	RJAAYPYX
						Wellington	NZZZYPYX
						Mumbai	VABBYPYX
Tokyo	RJTD	**SAFE31**	RJAA	TOKYO/New Tokyo Intl	HH + 00	BANGKOK	VTBBYPYX
			RJTT	TOKYO/Tokyo Intl	(HH + 30)	BRISBANE	YBZZSQJX
			ROAH	NAHA/Naha		SINGAPORE	WSZZYPYM
			RJOO	OSAKA/Osaka Intl		**TOKYO**	RJAAYPYX
			RJBB	OSAKA/Kansai Intl		Beijing	ZBBBYPYX
			RJNN	NAGOYA/Nagoya		Guam	PGUMCOAX
						Hong Kong	VHZZYPYX
						Incheon	RKSIYPYX
						Nadi	NFZZRCXX
						Wellington	NZZZYPYX

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ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
		SAFE32	RJCC	SAPPORO/New Chitose	HH + 00	BANGKOK	VTBBYPYX
			RJFF	FUKUOKA/Fukuoka	(HH + 30)	BRISBANE	YBZZSQJX
			RJFK	KAGOSHIMA/Kagoshima		SINGAPORE	WSZZYPYM
			RJCH	HAKODATE/Hakodate		**TOKYO**	RJAAYPYX
			RJFU	NAGASAKI/Nagasaki		Beijing	ZBBBYPYX
						Guam	PGUMCOAX
						Hong Kong	VHZZYPYX
						Incheon	RKSIYPYX
						London	EGZZMASI
						Nadi	NFZZRCXX
						Wellington	NZZZYPYX
Wellington	NZKL	**SANZ31**	NZWN	WELLINGTON/Wellington Intl	HH + 00	BANGKOK	VTBBYPYX
			NZAA	AUCKLAND/Auckland Intl		**BRISBANE**	YBZZSQJX
			NZCH	CHRISTCHURCH/Christchurch Intl		SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Beijing	ZBBBYPYX
						Hong Kong	VHZZYPYX
						Incheon	RKSIYPYX
						Jakarta	WIZZYPYX
						Nadi	NFFNYPYX
						Port Moresby	AYPYYMYX
MID REGION							
Baghdad*	ORBS	**SAAW31**	ORBS	BAGHDAD/Saddam Intl	HH + 50	**BANGKOK**	VTBBYPYX
			ORMM	BASRAH/Basrah Intl	(HH + 20)	BRISBANE	YBBBYZYX
						SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Bahrain	OBZZYPYX
						Beirut	OLLYPYX
						Jeddah	OEJDYPYX
						Tehran	OIZZYPYX
Bahrain	OBBI	**SABN31**	OBBI	BAHRAIN/Intl	HH +50	**BANGKOK**	VTBBYPYX
			OEDF	DAMMAM/King Fahd Intl		BRISBANE	YBBBYZYX
			OEDR	DHAHRAN/King Abdul Aziz Air base		SINGAPORE	WSZZYPYM
			OTBD	DOHA/Intl		TOKYO	RJAAYPYX

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ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
			OKBK	KUWAIT/Intl		Abu Dhabi	OMAMYMYX
			(OOSA)	(SALALAH)		Baghdad	ORBSYPYX
						Beirut	OLLLYPYX
						Hong Kong	VHZZYPYX
						Jeddah	OEZZYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
						Tehran	OIZZYPYX
						Wellington	NZZZYPYX
		SABN32	OMAA	ABU DHABI/Abu Dabi Intl	HH + 00	**BANGKOK**	VTBBYPYX
			OMAL	AL AIN		BRISBANE	YBBBYZYX
			OMDB	DUBAI/Dubai Intl		SINGAPORE	WSZZYPYM
			OMFJ	FUJEIRAH/Fujeirah Intl		TOKYO	RJAAYPYX
			OMRK	RAS AL KHAIMAH/Ras Al Kahimah		Abu Dhabi	OMAMYMYX
			OMSJ	SHARJAH/Intl		Baghdad	ORBSYPYX
				MUSCAT/Seeb Intl		Beirut	OLLLYPYX
						Hong Kong	VHZZYPYX
						Jeddah	OEZZYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
						Tehran	OIZZYPYX
						Wellington	NZZZYPYX
Beirut*	OLBA	**SALB31**	OLBA	BEIRUT/Beirut Intl	HH + 00	**BANGKOK**	VTBBYPYX
			OSDI	DAMASCUS/Damascus Intl	(HH + 30)	BRISBANE	YBBBYZYX
			OJAM	AMMAN/Marka Intl		SINGAPORE	WSZZYPYM
			OJAI	AMMAN/Qeen Alia Intl		TOKYO	RJAAYPYX
						Abu Dhabi	OMZZYPYX
						Baghdad	ORBSYMYX
						Bahrain	OBZZYPYX
						Jeddah	OEJDYPYX
Jeddah*	OEJD	**SADS31**	OEDF	DAMMAM/King Fahd Intl	HH + 50	**BANGKOK**	VTBBYPYX
			OEDR	DHAHRAN/King Abdul Aziz Air Base		BRISBANE	YBBBYZYX
			OEJN	JEDDAH/King Abdul Aziz Intl		SINGAPORE	WSZZYPYM
			OEMA	MADINAH/Prince Mohammad Bin Abdul Aziz		TOKYO	RJAAYPYX

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
			OERK	RIYADH/King Khaled Intl		Abu Dhabi	OMZZYPYX
			OERY	RIYADH		Baghdad	ORBBYMYX
			OYSN	SANA'A/Sana'a Intl		Bahrain	OBZZYPYX
						Beirut	OLLLYPYX
						Hong Kong	VHZZYPYX
Tehran*	OIII	**SAIR31**	OIII	THERAN/Mehrabad Intl	HH + 00	**BANGKOK**	VTBBYPYX
			OIFM	ESFAHAN/Shahid Behesti	(HH + 30)	BRISBANE	YBBBYZYX
			OISS	SHIRAZ/Shahid Dastghaib Intl		SINGAPORE	WSZZYPYM
			OIZH	ZAHEDAN/Zahedan Intl		TOKYO	RJAAYPYX
			OIKB	BANDAR ABBAS/Bandar Abbas Intl		Abu Dhabi	OMZZYPYX
			OIMM	MASHHAD/Shahid Hashemi Nejad Intl		Baghdad	ORBSYMYX
			OIAW	AHWAZ		Bahrain	OBZZYPYX
			OIKK	KERMAN		Beirut	OLLLYPYX
			OITT	TABRIZ/Tabriz Intl		Delhi	VIDPYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
						Hong Kong	VHZZYPYX
		SAIR32	OAKB	KABUL/Kabul	HH + 00	**BANGKOK**	VTBBYPYX
			OAKN	KANDAHAR/Kandahar		BRISBANE	YBBBYZYX
						SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Abu Dhabi	OMZZYPYX
						Baghdad	ORBSYMYX
						Bahrain	OBZZYPYX
						Beirut	OLLLYPYX
						Delhi	VIDPYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX

APPENDIX B

Table 2. ROBEX Collection and Dissemination of TAF (FT) Bulletins

Explanation of the Table

Col. 1: Name of ICAO location indicator of the ROBEX Centre compiling the bulletin

Col. 2: Description of the TAF Bulletin

Col. 3: Distribution of the bulletin to other ROBEX Centres and RODBs

Note : The RODB responsible for storing the bulletin is in bold

Table 2. ROBEX Collection and Dissemination of TAF (FT) Bulletins

1		2					3	
ROBEX Centre		**TAF Bulletin**					**Dissemination**	
Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of v.**	**RODB/ROBEX C.**	**AFTN address**
Bangkok	VTBD	**FTAS31**	VTBD	BANGKOK/Bangkok Intl	0400	0600	**BANGKOK**	VTBBYPYX
			VYYY	YANGON/ Yangon Intl	1000	1200	BRISBANE	YBBBYPYX
			VGZR	DHAKA/Zia Intl	1600	1800	SINGAPORE	WSZZYPYM
			VLVT	VIENTIANE/Wattay	2200	0000	TOKYO	RJAAYPYX
			VVTS	HO-CHI-MINH/Tan-Son Nhat			Abu Dhabi	OMZZYPYX
			VDPP	PHNOM PENH/Pochentong			Bahrain	OBZZYPYX
							Beijing	ZBBBYPYX
							Beirut	OLLLYPYX
							Hong Kong	VHZZYPYX
							Jeddah	OEJDYPYX
							Karachi	OPZZYPYX
							Kuala Lumpur	WMZZYPYR
							Mumbai	VABBYPYX
							Incheon	RKSIYPYX
							Tehran	OIIIYPYX
							Wellington	NZZZYPYA
		FTAS32	VTBU	RAYONG/U-Tapao Intl	0400	0600	**BANGKOK**	VTBBYPYX
			VTCC	CHIANG MAI/Chiang Mai Intl	1000	1200	BRISBANE	YBBBYPYX
			VTSS	SONGKHLA/Hat Yai Intl	1600	1800	SINGAPORE	WSZZYPYM
			VTSP	PHUKET/Phuket Intl	2200	0000	TOKYO	RJAAYPYX
			VVNB	HANOI/Noibai			Bahrain	OBZZYPYX
			VVDN	DANANG/Danang			Beijing	ZBBBYPYX
							Beirut	OLLLYPYX
							Hong Kong	VHZZYPYX
							Jeddah	OEJDYPYX
							Karachi	OPZZYPYX
							Kuala Lumpur	WMZZYPYR
							Mumbai	VABBYPYX
							Incheon	RKSIYPYX
							Tehran	OIIIYPYX
							Wellington	NZZZYPYA

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ROBEX Centre		**TAF Bulletin**					**Dissemination**	
Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of v.**	**RODB/ROBEX C.**	**AFTN address**
Beijing	ZBBB	**FTCI31**	ZBAA	BEIJING/Capital	0500	0600	BANGKOK	VTBBYPYX
			ZBTJ	TIANJING/Binhai	1100	1200	BRISBANE	YBBBYPYX
			ZBYN	TAIYUAN/Wusu	1700	1800	SINGAPORE	WSZZYPYM
			ZGGG	GUANGZHOU/Baiyun	2300	0000	**TOKYO**	RJAAYPYX
			ZSSS	SHANGHAI/Hongqiao			Hong Kong	VHZZYPYX
			ZSHC	HANGZHOU/Xiaoshan			Karachi	OPZZYPYX
			ZYTX	SHENYANG/Taoxian			Mumbai	VABBYPYX
			ZYTL	DALIAN/Zhoushuzi			Incheon	RKSIYPYX
			ZWWW	URUMQI/Diwopu			Ulan Bator	XMUBYMYX
			ZSPD	SHANGHAI/Pudong			Wellington	NZZZYPYA
		FTCI32	ZPPP	KUNMING/Wujiaba	0500	0600	BANGKOK	VTBBYPYX
			ZGNN	NANNING/Wuxu	1100	1200	BRISBANE	YBBBYPYX
			ZGOW	SHANTOU/Shantou	1700	1800	SINGAPORE	WSZZYPYM
			ZGSZ	SHENZHEN/Baoan	2300	0000	**TOKYO**	RJAAYPYX
			ZSAM	XIAMEN/Gaoqi			Hong Kong	VHZZYPYX
			ZSQD	QINGDAO/Liuting			Jakarta	WIZZYPYX
			ZUUU	CHENGDU/Shuangliu			Karachi	OPZZYPYX
			ZLXY	XIAN/Xianyang			Kuala Lumpur	WMZZYPYR
			ZMUB	ULAANBAATOR/Bryant-Ukhaa			Mumbai	VABBYPYX
			ZGKL	GUILIN/Liangjang			Wellington	NZZZYPYA
		FTCI41	ZBHH	HOHHOT/Baita	0500	0600	BANGKOK	VTBBYPYX
			ZGHA	CHANGSHA/Huanghua	1100	1200	BRISBANE	YBBBYPYX
			ZJHK	HAIKOU/Meilan	1700	1800	SINGAPORE	WSZZYPYM
			ZHHH	WUHAN/Tianhe	2300	0000	**TOKYO**	RJAAYPYX
			ZSOF	HEFEI/Luogang			Hong Kong	VHZZYPYX
			ZSNJ	NANJING/Lukou			Jakarta	WIZZYPYX
			ZUCK	CHONGQING/Jiangbei			Karachi	OPZZYPYX
			ZLLL	LANZHOU/Zhongchuan			Mumbai	VABBYPYX
			ZYHB	HARBIN/Yanjiangang			Incheon	RKSIYPYX
			ZYCC	CHANGCHUN/Dafangshen			Ulan Bator	ZMUBYMYX
			ZWSH	KASHI			Wellington	NZZZYPYX

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ROBEX Centre		**TAF Bulletin**					**Dissemination**	
Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of v.**	**RODB/ROBEX C.**	**AFTN address**
Brisbane	YBBN	**FTAU31**	YSSY	SYDNEY/Kingsford Smith Intl	0500	0600	BANGKOK	VTBBYPYX
			YPAD	ADELAIDE/Adelaide	1100	1200	**BRISBANE**	YBBBYPYX
			YBBN	BRISBANE/Brisbane	1700	1800	SINGAPORE	WSZZYPYM
			YMML	MELBOURNE/Melbourne Intl	2300	0000	TOKYO	RJAAYPYX
			YBCS	CAIRNS/Cairns			Beijing	ZBBBYPYX
			YPPH	PERTH/Perth			Hong Kong	VHZZYPYX
			YPDN	DARWIN/Darwin			Jakarta	WIZZYPYX
			YBAS	ALICE SPRINGS/Alice Springs			Manila	RPLLYPYX
			YPTN	TINDAL/Tindal			Mumbai	VABBYPYX
			YPXM	CHRISTMAS ISLAND/Christmas Island			Nadi	NFZZRFXX
							Port Moresby	AYPYYMYX
							Wellington	NZZZYPYX
		FTAU32	YSCB	CANBERRA/Canberra	0500	0600	BANGKOK	VTBBYPYX
			YBCG	COOLANGATTA/Coolangatta	1100	1200	**BRISBANE**	YBBBYPYX
			YMAV	AVALON/Avalon	1700	1800	SINGAPORE	WSZZYPYM
			YBTL	TOWNSVILLE/Townsville	2300	0000	TOKYO	RJAAYPYX
			YBRK	ROCKHAMPTON/Rockhampton			Hong Kong	VHZZYPYX
			YPLM	LEARMOUNTH/Learmounth			Jakarta	WIZZYPYX
			YPKG	KALGOORLIE/Kalgoorlie			Manila	RPLLYPYX
			YPPD	PORT HEDLAND/Port Hedland			Mumbai	VABBYPYX
			YPEA	PEARCE/Perace RAAF			Nadi	NFZZRFXX
			YPCC	COCOS ISLAND/Cocos Island			Wellington	NZZZYPYX
		FTAU33	YBRM	BROOME/Broome	0100	0200	BANGKOK	VTBBYPYX
			YSNF	NORFOLK ISLAND/Norfolk Island	0700	0800	**BRISBANE**	YBBBYPYX
			YSDU	DUBBO/Dubbo	1300	1400	SINGAPORE	WSZZYPYM
			YSRI	RICHMOND/Richmond RAAF	1900	2000	TOKYO	RJAAYPYX
			YWLM	WILLIAMTOWN/Williamtown RAAF			Jakarta	WIZZYPYX
			YMLT	LAUNCESTON/Launceston			Manila	RPLLYPYX
			YMHB	HOBART/Hobart			Mumbai	VABBYPYX
							Nadi	NFZZRFXX
							Wellington	NZZZYPYX

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ROBEX Centre		**TAF Bulletin**					**Dissemination**	
Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of v.**	**RODB/ROBEX C.**	**AFTN address**
Hong Kong	VHHH	**FTHK31**	VHHH	HONG KONG/Hong Kong Intl	0400	0600	BANGKOK	VTBBYPYX
			RCTP	TAIBEI/Taibei Intl	1000	1200	BRISBANE	YBBBYPYX
			RCKH	GAOXIONG/Gaoxiong	1600	1800	SINGAPORE	WSZZYPYM
			RCSS	TABEI/Sungshan	2200	0000	**TOKYO**	RJAAYPYX
			VMMC	MACAU/Macau Intl			Abu Dhabi	OMZZYPYX
			RPLL	MANILA/Ninoy Aquino Intl			Bahrain	OBZZYPYX
			RPVM	LAPU LAPU/Mactan Cebu Intl			Beijing	ZBBYPYX
			RPMD	DAVAO/Francisco Bangoy Intl			Beirut	OLLLYPYX
			RPLB	SUBIC BAY/Subic Bay Intl			Karachi	OPZZYPYX
			RPMZ	ZAMBOANGA/Zamboanga Intl			Mumbai	VABBYPYX
			RPLI	LAOAG/Laoag Intl			Incheon	RKSIYPYX
							Tehran	OIIIYPYX
							Wellington	NZZZYPYA
Karachi	OPKC	**FTPK31**	OPKC	KARACHI/Quaid-E-Azam Intl	0400	0600	**BANGKOK**	VTBBYPYX
			OPRN	ISLAMABAD/Chaklala	1000	1200	BRISBANE	YBBBYPYX
			OPLA	LAHORE/Lahore	1600	1800	SINGAPORE	WSZZYPYM
			OPNH	NAWABSHAH/Nawabshah	2200	0000	TOKYO	RJAAYPYX
			OPPS	PESHAVAR			Abu Dhabi	OMZZYPYX
			~~OAKB~~	~~KABUL/Kabul~~			Bahrain	OBZZYPYX
			~~OAKN~~	~~KANDAHAR/Kandahar~~			Beijing	ZBBYPYX
			OPGD	GAWADAR			Beirut	OLLLYPYX
							Hong Kong	VHZZYPYX
							Jeddah	OEJDYPYX
							Karachi	OPZZYPYX
							Tehran	OIIIYPYX
Mumbai	VABB	**FTIN31**	VABB	MUMBAI/Jawaharlal Nehru Intl	0400	0600	**BANGKOK**	VTBBYPYX
			VAAH	AHMADABAD/Ahmadabad	1000	1200	BRISBANE	YBBBYPYX
			VECC	CALCUTTA/Calcutta	1600	1800	SINGAPORE	WSZZYPYM
			VCBI	COLOMBO/Katunayake	2200	0000	TOKYO	RJAAYPYX
			VIDP	DELHI/Indira Gandhi Intl			Abu Dhabi	OMZZYPYX
			VILK	LUCKNOW*			Bahrain	OBZZYPYX
			VOMM	CHENNAI/Chennai			Beijing	ZBBYPYX
			VOTV	TRIVANDRUM/Trivandrum			Beirut	OLLLYPYX
			VANP	NAGPUR/Nagpur			Hong Kong	VHZZYPYX

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ROBEX Centre		**TAF Bulletin**					**Dissemination**	
Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of v.**	**RODB/ROBEX C.**	**AFTN address**
			VNKT	KATHMANDU/Tribhuvan Intl			Jeddah	OEJDYPYX
			VIJP	JAIPUR			Karachi	OPZZYPYX
							Tehran	OIIIYPYX
Nadi	NFFN	**FTPS31**	NFFN	NADI/Intl	0400	0600	BANGKOK	VTBBYPYX
			NWWW	NOUMEA/La Tontouta	1000	1200	BRISBANE	YBBBYPYX
			NSTU	PAGO PAGO/Intl, Tutuila I.	1600	1800	SINGAPORE	WSZZYPYM
					2200	0000	**NADI**	
							TOKYO	RJAAYPYX
							Hong Kong	VHZZYPYX
							Wellington	NZZZYPYA
Incheon	RKSI	**FTKO31**	RKSI	SEOUL/Incheon Intl	0500	0600	BANGKOK	VTBBYPYX
			RKSS	SEOUL/Gimpo Intl	1100	1200	BRISBANE	YBBBYPYX
			RKPC	JEJU/Jeju Intl	1700	1800	SINGAPORE	WSZZYPYM
			RKPK	BUSAN/Gimhae Intl	2300	0000	**TOKYO**	RJAAYPYX
			RKTU	CHEONGJU/Cheongju Intl			Hong Kong	VHZZYPYX
			RKNY	YANGYANG/Yangyang Intl			Karachi	OPZZYPYX
			RKTN	DAEGU/Daegu Intl			Wellington	NZZZYPYX
Singapore	WSSS	**FTSR31**	WSSS	SINGAPORE/Changi	0430	0600	BANGKOK	VTBBYPYX
			WSAP	SINGAPORE/Paya Lebar	1030	1200	BRISBANE	YBBBYPYX
			WMKK	KUALA LUMPUR/Kuala Lumpur Intl			NADI	NFZZRFXX
			WRRR	DENPASAR/Ngurah Rai (Bali Intl)	1630	1800	**SINGAPORE**	WSZZYPYM
			WMKJ	JOHOR BAHRU/Sultan Ismail	2230	0000	TOKYO	RJAAYPYX
			WMKP	PENANG/Bayan Lepas			Abu Dhabi	OMZZYPYX
			WRSJ	SURABAYA/Juanda			Bahrain	OBZZYPYX
			WIIH	JAKARTA/Halim			Beijing	ZBBBYPYX
			WIII	JAKARTA/Soekarno-Hatta			Beirut	OLLLYPYX
			WMSA	SUBANG/Sultan Abdul Aziz Shah			Colombo	VCCCYPYX
							Hong Kong	VHZZYPYX
							Karachi	OPZZYPYX
							Manila	RPLLYPYX
							Mumbai	VABBYPYX
							Incheon	RKSIYPYX
							Tehran	OIIIYPYX
							Wellington	NZZZYPYA

1		2					3	
ROBEX Centre		**TAF Bulletin**					**Dissemination**	
Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of v.**	**RODB/ROBEX C.**	**AFTN address**
		FTSR32	WBSB	BANDAR SERI BEGAWAN /Brunei Intl	0430	0600	BANGKOK	VTBBYPYX
			WBKK	KOTA KINABALU/Kota Kinabalu Intl	1030	1200	BRISBANE	YBBBYPYX
			WBGG	KUCHING/Kuching	1630	1800	**SINGAPORE**	WSZZYPYM
			WIMM	MEDAN/Polonia	2230	0000	TOKYO	RJAAYPYX
							Beirut	OLLLYPYX
							Hong Kong	VHZZYPYX
							Manila	RPLLYMYX
							Mumbai	VABBYPYX
							Wellington	NZZZYPYX
Tokyo	RJTD	**FTJP31**	RJAA	TOKYO/New Tokyo Intl	0300	1200	BANGKOK	VTBBYPYX
			RJTT	TOKYO/Tokyo Intl	0900	1800	BRISBANE	YBBBYPYX
			ROAH	NAHA/Naha	1500	0000	SINGAPORE	WSZZYPYM
			RJOO	OSAKA/Osaka Intl	2100	0600	**TOKYO**	RJAAYPYX
			RJCH	HAKODATE/Hakodate			Beijing	ZBBBYPYX
			RJBB	OSAKA/Kansai Intl			Beirut	OLLLYPYX
			RJSS	SENDAI/Sendai			Hong Kong	VHZZYPXX
							Mumbai	VABBYPYX
							Seoul	RKSIYPYX
							Wellington	NZZZYPYA
							Colombo	VCBIYMYX
							Nadi	NFZZRAXX
							Saipan	PGSNYMYX
							Guam	PGUMCOAX
		FTJP32	RJFF	FUKUOKA/Fukuoka	0300	1200	BANGKOK	VTBBYPYX
			RJNN	NAGOYA/Nagoya	0900	1800	BRISBANE	YBBBYPYX
			RJCC	SAPPORO/New Chitose			NADI	NFFNYPYX
			RJFK	KAGOSHIMA/Kagoshima	1500	0000	SINGAPORE	WSZZYPYM
			RJSN	NIIGATA/Niigata	2100	0600	**TOKYO**	RJAAYPYX
			RJFU	NAGASAKI/Nagasaki			Beijing	ZBBBYPYX
			RJFT	KUMAMOTO/Kumamoto			Beirut	OLLLYPYX
			RJOA	HIROSHIMA/Hiroshima			Hong Kong	VHZZYPXX
			RJOB	OKAYAMA/Okayama			Mumbai	VABBYPYX
			RJOT	TAKAMATSU/Takamatsu			Seoul	RKSIYPYX
			RJFO	OITA/Oita			Wellington	NZZZYPYA
			RJNT	TOYAMA/Toyama			Colombo	VCBIYMYX
			RJNK	KANAZAWA/Komatsu			Saipan	PGSNYMYX
							Guam	PGUMCOAX

1		2					3	
ROBEX Centre		**TAF Bulletin**					**Dissemination**	
Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of v.**	**RODB/ROBEX C.**	**AFTN address**
Wellington	NZKL	**FTNZ31**	NZWN	WELLINGTON/Wellington Intl		1200	BANGKOK	VTBBYPYX
			NZAA	AUCKLAND/Auckland Intl		1800	**BRISBANE**	YBBBYPYX
			NZCH	CHRISTCHURCH/Christchurch Intl			NADI	NFZZRFYX
						0000	SINGAPORE	WSZZYPYM
						0600	TOKYO	RJAAYPYX
							Beijing	ZBBBYPYX
							Port Moresby	AYPPYMYX
							Hong Kong	VHZZYPYX
MID REGION								
Bahrain	OBBI	**FTBN31**	OBBI	BAHRAIN/Intl	0300	0600	**BANGKOK**	VTBBYPYX
			OEDR	DHAHRAN/King AbdulAziz Air base	0900	1200	BRISBANE	YBBBYPYX
			OTBD	DOHA/Intl	1500	1800	SINGAPORE	WSZZYPYM
			OKBK	KUWAIT/Intl	2100	0000	TOKYO	RJAAYPYX
							Baghdad	ORBSYMYX
							Beijing	ZBBBYPYX
							Beirut	OLLLYPYX
							Hong Kong	VHZZYPYX
							Jeddah	OEJDYPYX
							Karachi	OPZZYPYX
							Mumbai	VABBYPYX
							Seoul	RKSSYPYX
							Tehran	OIIIYPYX
							Wellington	NZZZYPYX
		FTBN32	OMAA	ABU DHABI/Abu Dabi Intl	0300	0600	**BANGKOK**	VTBBYPYX
			OMDB	DUBAI/Dubai Intl	0900	1200	BRISBANE	YBBBYPYX
			OMSJ	SHARJAH/Intl	1500	1800	SINGAPORE	WSZZYPYM
			OOMS	MUSCAT/Seeb Intl	2100	0000	TOKYO	RJAAYPYX
			OMRK	RAS AL KHAIMAH/Ras Al Kahimah			Baghdad	ORBSYMYS
			OMFJ	FUJEIRAH/Fujeirah Intl			Beijing	ZBBBYPYX
			OOSA	SALALAH			Beirut	OLLLYPYX
			OMAL	AL AIN			Hong Kong	VHZZYPYX
							Jeddah	OEJDYPYX
							Karachi	OPZZYPYX
							Mumbai	VABBYPYX

1		2					3	
ROBEX Centre		**TAF Bulletin**					**Dissemination**	
Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of v.**	**RODB/ROBEX C.**	**AFTN address**
							Seoul	RKSSYPYX
							Tehran	OIIIYPYX
							Wellington	NZZZYPYX
Beirut	OLBA	**FTME31**	OLBA	BEIRUT/Beirut Intl	0400	0600	**BANGKOK**	VTBBYPYX
			OJAM	AMMAN/Marka Intl	1000	1200	BRISBANE	YBBBYPYX
			OJAI	AMMAN/Qeen Alia Intl	1600	1800	SINGAPORE	WSZZYPYM
			ORBS	BAGHDAD/Saddam Intl	2200	0000	TOKYO	RJAAYPYX
			ORMM	BASRAH/Basrah Intl			Abu Dhabi	OMZZYPYX
			OSDI	DAMASCUS/Damascus Intl			Bahrain	OBZZYPYX
							Jeddah	OEJDYPYX
							Karachi	OPZZYPYX
							Mumbai	VABBYPYX
							Tehran	OIIIYPYX
Jeddah	OEJD	**FTSD31**	OEJN	JEDDAH/King Abdul Aziz Intl	0400	0600	**BANGKOK**	VTBBYPYX
			OEMA	MADINAH/Pr. Mohammad Bin Abdul Aziz	1000	1200	BRISBANE	YBBBYPYX
			OERK	RIYADH/King Khaled Intl	1600	1800	SINGAPORE	WSZZYPYM
			OEDR	DHAHRAN/King Abdul Aziz Air Base	2200	0000	TOKYO	RJAAYPYX
			OYSN	SANA'A/Sana'a Intl			Abu Dhabi	OMZZYPYX
			OYAA	ADEN/Aden Intl			Bahrain	OBZZYPYX
							Beirut	OLLLYPYX
							Hong Kong	VHZZYPYX
							Karachi	OPZZYPYX
							Mumbai	VABBYPYX
							Tehran	OIIIYPYX
Tehran	OIII	**FTIR31**	OIII	THERAN/Mehrabad Intl	0400	0600	**BANGKOK**	VTBBYPYX
			OIFM	ESFAHAN/Shahid Behesti	1000	1200	BRISBANE	YBBBYPYX
			OISS	SHIRAZ/Shahid Dastghaib Intl	1600	1800	SINGAPORE	WSZZYPYM
			OIZH	ZAHEDAN/Zahedan Intl	2200	0000	TOKYO	RJAAYPYX
			OIKB	BANDAR ABBAS/Bandar Abbas Intl			Abu Dhabi	OMZZYPYX
			OIMM	MASHHAD/Shahid Hashemi Nejad Intl			Bahrain	OBZZYPYX
			OIAW	AHWAZ			Beijing	ZBBBYPYX
			OIKK	KERMAN			Beirut	OLLLYPYX
			OITT	TABRIZ/Tabriz Intl			Jeddah	OEJDYPYX
							Karachi	OPZZYPYX
							Mumbai	VABBYPYX

APPENDIX B

Table 2. ROBEX Collection and Dissemination of TAF (FT) Bulletins

Explanation of the Table

Col. 1: Name of ICAO location indicator of the ROBEX Centre compiling the bulletin

Col. 2: Description of the TAF Bulletin

Col. 3: Distribution of the bulletin to other ROBEX Centres and RODBs

Note : The RODB responsible for storing the bulletin is in bold

Table 3. ROBEX Collection and Dissemination of Short (9- and 12-hr) TAF Bulletins (FC)

1		2					3	
ROBEX Centre		**TAF Bulletin**					**Dissemination**	
Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of v.**	**RODB/ROBEX C.**	**AFTN address**
Bangkok	**VTBD**	**FCAS31**	VTBD	BANGKOK/Bangkok Intl	2300	0000	**BANGKOK**	VTBBYPYX
			VTCC	Chiang Mai	0200	0300	BRISBANE	YBBBYPYX
					0500	0600	SINGAPORE	WSZZYPYM
					0800	0900	TOKYO	RJAAYPYX
					1100	1200	Abu Dhabi	OMZZYPYX
					1400	1500	Bahrain	OBZZYPYX
					1700	1800	Beijing	ZBBBYPYX
					2000	2100	Beirut	OLLLYPYX
							Hong Kong	VHZZYPYX
							Jeddah	OEJDYPYX
							Karachi	OPZZYPYX
							Kuala Lumpur	WMZZYPYR
							Mumbai	VABBYPYX
							Incheon	RKSIYPYX
							Tehran	OIIIYPYX
							Wellington	NZZZYPYA
Beijing	**ZBBB**	**FCCI31**	ZBAA	BEIJING/Capital	2300	0000	BANGKOK	VTBBYPYX
			ZGGG	GUANGZHOU/Baiyun	0200	0300	BRISBANE	YBBBYPYX
			ZSSS	SHANGHAI/Hongqiao	0500	0600	SINGAPORE	WSZZYPYM
			ZYTX	SHENYANG/Taoxian	0800	0900	**TOKYO**	RJAAYPYX
			ZWWW	URUMQI/Diwopu	1100	1200	Hong Kong	VHZZYPYX
			ZSPD	SHANGHAI/Pudong	1400	1500	Karachi	OPZZYPYX
			ZPPP	KUNMING/Wujiaba	1700	1800	Mumbai	VABBYPYX
			ZGSZ	SHENZHEN/Baoan	2000	2100	Incheon	RKSIYPYX
			ZHHH	WUHAN/Tianhe			Ulan Bator	XMUBYMYX
			ZLLL	LANZHOU/Zhongchuan			Wellington	NZZZYPYA
			ZJSY	SANYA				
Brisbane	**YBBN**	**FCAU31**	YBRM	BROOME/Broome	0500	0600	BANGKOK	VTBBYPYX
			YSNF	NORFOLK ISLAND/Norfolk Island	1100	1200	**BRISBANE**	YBBBYPYX
			YSDU	DUBBO/Dubbo	1700	1800	SINGAPORE	WSZZYPYM
			YSRI	RICHMOND/Richmond RAAF	2300	0000	TOKYO	RJAAYPYX
			YWLM	WILLIAMTOWN/Williamtown RAAF			Beijing	ZBBBYPYX
			YMLT	LAUNCESTON/Launceston			Hong Kong	VHZZYPYX
			YMHB	HOBART/Hobart			Jakarta	WIZZYPYX
			YBHM	HAMILTON ISLAND			Manila	RPLLYPYX
			YBMA	MOUNT ISA			Mumbai	VABBYPYX

1		2					3	
ROBEX Centre		**TAF Bulletin**					**Dissemination**	
Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of v.**	**RODB/ROBEX C.**	**AFTN address**
			YAMB	AMBERLEY			Nadi	NFZZRFXX
			YPGV	GOVE			Port Moresby	AYPYYMYX
			YFRT	FORREST			Wellington	NZZZYPYX
			YCIN	CURTIN/DERBY				
Hong Kong	**VHHH**	**FCHK31**	VHHH	HONG KONG/Hong Kong Intl	2300	0000	BANGKOK	VTBBYPYX
					0200	0300	BRISBANE	YBBBYPYX
					0500	0600	SINGAPORE	WSZZYPYM
					0800	0900	**TOKYO**	RJAAYPYX
					1100	1200	Abu Dhabi	OMZZYPYX
					1400	1500	Bahrain	OBZZYPYX
					1700	1800	Beijing	ZBBYPYX
					2000	2100	Beirut	OLLLYPYX
							Karachi	OPZZYPYX
							Mumbai	VABBYPYX
							Incheon	RKSIYPYX
							Tehran	OIIIYPYX
							Wellington	NZZZYPYA
Karachi	**OPKC**			NIL				
Mumbai	**VABB**	***FCIN31***		NIL				
Nadi	**NFFN**	**FCPS31**	NFFN	NADI/Intl	2300	0000	BANGKOK	VTBBYPYX
			NFNA		0200	0300	BRISBANE	YBBBYPYX
			NFTF	Fua'amotu, Tonga	0500	0600	SINGAPORE	WSZZYPYM
			NFTV	Vava'u, Tonga	0800	0900	**NADI**	
			NSFA	Faleolo/Apia, Samoa	1100	1200	TOKYO	RJAAYPYX
			NCRG	Avarua, Cook Islands	1400	1500	Hong Kong	VHZZYPYX
			NIUE	Alofi, Niue	1700	1800	Wellington	NZZZYPYA
			NLWW		2000	2100		
Incheon	**RKSI**			NIL				
Singapore	**WSSS**	**FCSR31**	WSSS	SINGAPORE/Changi	2300	0000	BANGKOK	VTBBYPYX
					0200	0300	BRISBANE	YBBBYPYX
					0500	0600	**SINGAPORE**	WSZZYPYM
					0800	0900	TOKYO	RJAAYPYX
					1100	1200	Abu Dhabi	OMZZYPYX
					1400	1500	Bahrain	OBZZYPYX

1		2					3	
ROBEX Centre		**TAF Bulletin**					**Dissemination**	
Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of v.**	**RODB/ROBEX C.**	**AFTN address**
					1700	1800	Beijing	ZBBBYPYX
					2000	2100	Beirut	OLLLYPYX
							Colombo	VCCCYPYX
							Hong Kong	VHZZYPYX
							Karachi	OPZZYPYX
							Manila	RPLLYPYX
							Mumbai	VABBYPYX
							Nadi	NFZZRFXX
							Incheon	RKSIYPYX
							Tehran	OIIIYPYX
							Wellington	NZZZYPYA
Tokyo	**RJTD**	**FCJP31**	RJAA	TOKYO/New Tokyo Intl	2300	0000	BANGKOK	VTBBYPYX
			RJTT	TOKYO/Tokyo Intl	0200	0300	BRISBANE	YBBBYPYX
			ROAH	NAHA/Naha	0500	0600	SINGAPORE	WSZZYPYM
			RJOO	OSAKA/Osaka Intl	0800	0900	**TOKYO**	RJAAYPYX
			RJCH	HAKODATE/Hakodate	1100	1200	Beijing	ZBBBYPYX
			RJBB	OSAKA/Kansai Intl	1400	1500	Beirut	OLLLYPYX
			RJSS	SENDAI/Sendai	1700	1800	Hong Kong	VHZZYPXX
					2000	2100	Mumbai	VABBYPYX
							Seoul	RKSIYPYX
							Wellington	NZZZYPYA
							Colombo	VCBIYMYX
							Nadi	NFFNYPYX
							Saipan	PGSNYMYX
							Guam	PGUMCOAX
		FCJP32	RJFF	FUKUOKA/Fukuoka	2300	0000	BANGKOK	VTBBYPYX
			RJNN	NAGOYA/Nagoya	0200	0300	BRISBANE	YBBBYPYX
			RJCC	SAPPORO/New Chitose	0500	0600	SINGAPORE	WSZZYPYM
			RJFK	KAGOSHIMA/Kagoshima	0800	0900	**TOKYO**	RJAAYPYX
			RJSN	NIIGATA/Niigata	1100	1200	Beijing	ZBBBYPYX
			RJFU	NAGASAKI/Nagasaki	1400	1500	Beirut	OLLLYPYX
			RJFT	KUMAMOTO/Kumamoto	1700	1800	Hong Kong	VHZZYPXX
			RJOA	HIROSHIMA/Hiroshima	2000	2100	Mumbai	VABBYPYX
			RJOB	OKAYAMA/Okayama			Seoul	RKSIYPYX
			RJOT	TAKAMATSU/Takamatsu			Wellington	NZZZYPYA
			RJFO	OITA/Oita			Colombo	VCBIYMYX
			RJNT	TOYAMA/Toyama			Nadi	NFFNYPYX
			RJNK	KANAZAWA/Komatsu			Saipan	PGSNYMYX
							Guam	PGUMCOAX

APPENDIX D

ROBEX TABLES

ROBEX Collection and Dissemination of AIREP Bulletins

Explanation of Table

Col. 1: Name and ICAO location indicator of the ROBEX Centre compiling the bulletin.

Col. 2: WMO heading of the AIREP Bulletin

Col. 3: Name and ICAO location indicator of the MWOs under the area of responsibility of the he ROBEX centre in col.1.

Col. 4: Bulletin time

Col. 5: Distribution of the bulletin to other ROBEX centres and RODBs

ROBEX Collection and Dissemination of AIREP Bulletins

ROBEX Centre		AIREP bulletin and collection area			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	MWO	CCCC		RODB/ROBEX C.	AFTN Address
1		2	3		4	5	
ASIA/PAC REGION							
Bangkok	VTBD	**UAAS31**	BANGKOK/Bangkok Intl	VTBD	H+20	**BANGKOK**	VTBBYPYX
			VIENTIANE/Wattay	VLVT		BRISBANE	YBZZSQJX
			YANGON/ Yangon Intl	VYYY		SINGAPORE	WSZZYPYM
			PHNOM PENH/Pochentong	VDPP		TOKYO	RJAAYPYX
			GIA-LAM	VVGL		Beijing	ZBBBYPYX
						Colombo	VCCCYPYX
						Delhi	VIDPYPYX
						Hong Kong	VHZZYPYX
						Jakarta	WIZZMCMC
						Kolkata	VECCYPYX
						Kuala Lumpur	WMZZYPYR
						Mumbai	VABBYPYX
Beijing	ZBBB	**UACI31**	BEIJING/Capital	ZBAA	H+00	BANGKOK	VTBBYPYX
			GUANGZHOU/Baiyun	ZGGG		BRISBANE	YBZZSQJX
			KUNMING/Wujiaba	ZPPP		SINGAPORE	WSZZYPYM
			LANZHOU/Zhongchuan	ZLLL		**TOKYO**	RJAAYPYX
			SHANGHAI/Hongqiao	ZSSS		Delhi	VIDPYPYX
			SHENYANG/Taoxian	ZYTX		Hong Kong	VHZZYPYX
			URUMQI/Diwopu	ZWWW		Kolkata	VECCYPYX
			WUHAN/Tianhe	ZHHH			
			SANYA/Fenghuang	ZJSY			
			ULAANBAATOR/Bryant-Ukhaa	ZMUB			
Brisbane	YBBN	**UAAU31**	SYDNEY/Kingsford Smith Intl	YSSY	H+50	BANGKOK	VTBBYPYX
			MELBOURNE/Melbourne Intl	YMML		**BRISBANE**	YBZZSQJX
			BRISBANE/Brisbane	YBBN		SINGAPORE	WSZZYPYM
			ADELAIDE/Adelaide	YPAD		TOKYO	RJAAYPYX
			DARWIN/Darwin	YPDN		Hong Kong	VHZZYPYX
			PERTH/Perth int	YPPH		Jakarta	WIZZMIMI
			HOBART/Hobart	YMHB		Kuala Lumpur	WMZZYPYR
			TOWNSVILLE/Townsville	YBTL			

ROBEX Centre		AIREP bulletin and collection area			Bul. Time	DISSEMINATION TO	
Name	**CCCC**	**BUL No.**	**MWO**	**CCCC**		**RODB/ROBEX C.**	**AFTN Address**
Colombo	VCCC	**UASB31**	COLOMBO/Katunayake	VCBI	H+40	**BANGKOK**	VTBBYPYX
			MALE/Male Intl	VRMM		BRISBANE	YBZZSQJX
						SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Delhi	VIDPYPYX
						Jakarta	WIZZMIMI
						Kolkata	VECCYPYX
						Kuala Lumpur	WMZZYPYR
						Mumbai	VABBYPYX
						Mumbai	VABBYPYX
Delhi	VIDP	**UAIN32**	DELHI/Indira Gandhi Intl	VIDP	H+45	**BANGKOK**	VTBBYPYX
						BRISBANE	YBZZSQJX
						SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Abu Dhabi	OMAMYMYX
						Bahrain	OBZZYPYX
						Beijing	ZBBBYPYX
						Karachi	OPZZYPYX
						Kolkata	VECCYPYX
						Kuala Lumpur	WMZZYPYR
						Mumbai	VABBYPYX
						Tehran	OIZZYPYX
Hong Kong	VHHH	**UAHK31**	HONG KONG/Hong Kong Intl	VHHH	HH + 45	BANGKOK	VTBBYPYX
			TAIBEI/Taibei Intl	RCTP		BRISBANE	YBZZSQJX
			MANILA/Ninoy Aquino Intl	RPLL		SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Beijing	ZBBBYPYX
						Kuala Lumpur	WMZZYPYR
Jakarta	WIII	**UAID31**	UJUNG PANDANG/Hasanuddin	WAAA	HH + 20	BANGKOK	VTBBYPYX
			BIAK/Frans Kaisieppo	WABB		BRISBANE	YBZZSQJX
			JAKARTA/Soekarno-Hatta	WIII		**SINGAPORE**	WSZZYPYM
			DENPASAR	WRRR		TOKYO	RJAAYPYX
						Colombo	VCCCYPYX
						Hong Kong	VHZZYPYX
						Kuala Lumpur	WMZZYPYR
						Mumbai	VABBYPYX
						Port Moresby	AYPYYMYX

ROBEX Centre		AIREP bulletin and collection area			Bul. Time	DISSEMINATION TO	
Name	**CCCC**	**BUL No.**	**MWO**	**CCCC**		**RODB/ROBEX C.**	**AFTN Address**
Kolkata	VECC	**UAAE31**	KOLKATA/Netaji Subhash Chandra Bose Intl	VECC	HH + 00	**BANGKOK**	VTBBYPYX
			DHAKA/Zia Intl	VGZR		BRISBANE	YBZZSQJX
			KATHMANDU/Tribhuvan Intl*	VNKT		SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Colombo	VCCCYPYX
						Delhi	VIDPYPYX
						Hong Kong	VHZZYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
Karachi	OPKC	**UAPK31**	KARACHI/Quaid-E-Azam Intl	OPKC	HH + 35	**BANGKOK**	VTBBYPYX
			LAHORE/Lahore	OPLA		BRISBANE	YBZZSQJX
						SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Abu Dhabi	OMZZYPYX
						Bahrain	OBZZYPYX
						Colombo	VCCCYPYX
						Delhi	VIDDYPYX
						Jeddah	OEJDYPYX
						Kolkata	VECCYPYX
						Mumbai	VABBYPYX
						Tehran	OIZZYPYX
Kuala Lumpur	WMKK	**UAMS31**	KUALA LUMPUR/Kuala Lumpur Intl	WMKK	HH + 30	BANGKOK	VTBBYPYX
			SINGAPORE/Changi	WSSS		BRISBANE	YBZZSQJX
			KOTA KINABALU/Kota Kinabalu Intl	WBKK		**SINGAPORE**	WSZZYPYM
						TOKYO	RJAAYPYX
						Colombo	VCCCYPYX
						Delhi	VIDDYPYX
						Hong Kong	VHZZYPYX
						Jakarta	WIZZMBMB
						Kolkata	VECCYPYX
						Mumbai	VABBYPYX
Mumbai	VABB	**UAIN31**	MUMBA/Jawaharlal Nehru Intl	VABB	HH + 55	**BANGKOK**	VTBBYPYX
			CHENNAI/Chennai	VOMM		BRISBANE	YBZZSQJX
						SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Abu Dhabi	OMZZYPYX
						Bahrain	OBZZYPYX
						Colombo	VCCCYPYX

ROBEX Centre		AIREP bulletin and collection area			Bul. Time	DISSEMINATION TO	
Name	**CCCC**	**BUL No.**	**MWO**	**CCCC**		**RODB/ROBEX C.**	**AFTN Address**
						Delhi	VIDPYPYX
						Hong Kong	VHZZYPYX
						Jakarta	WIZZMBMB
						Jeddah	OEJDYPYX
						Karachi	OPZZYPYX
						Kolkata	VECCYPYX
						Kuala Lumpur	WMZZYPYR
						Tehran	OIZZYPYX
Nadi	NFFN	**UAFJ31**					
Port Moresby	AYPY	**UAPW31**	PORT MORESBY/Jacksons	AYPY	HH + 55	BANGKOK	VTBBYPYX
						BRISBANE	YBZZSQJX
						SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Jakarta	WIZZMBMB
						Hong Kong	WSZZYPYM
						Wellington	NZZZYPYX
Incheon	RKSI	**UAKO31**	SEOUL/Incheon Intl	RKSI	HH + 00	BANGKOK	VTBBYPYX
						BRISBANE	YBZZSQJX
						SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Beijing	ZBBBYPYX
						Hong Kong	WSZZYPYM
Tokyo	RJTD	**UAJP31**	TOKYO/New Tokyo Intl	RJAA	HH + 00	BANGKOK	VTBBYPYX
			NAHA/Naha	ROAH		BRISBANE	YBZZSQJX
						SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Beijing	ZBBBYPYX
						Hong Kong	VHZZYPYX
						Incheon	RKSIYPYX
						Jakarta	WIZZMBMB
						Kuala Lumpur	WMZZYPYR
						Port Moresby	AYPYYMYX

ROBEX Centre		AIREP bulletin and collection area			Bul. Time	DISSEMINATION TO	
Name	**CCCC**	**BUL No.**	**MWO**	**CCCC**		**RODB/ROBEX C.**	**AFTN Address**
Wellington	NZKL	**UANZ31**	WELLINGTON/Wellington Intl	NZWN	HH + 00	BANGKOK	VTBBYPYX
						BRISBANE	YBZZSQJX
						SINGAPORE	WSZZYPYM
						TOKYO	RJAAYPYX
						Beijing	ZBBBYPYX
						Hong Kong	VHZZYPYX
						Incheon	RKSIYPYX
						Jakarta	WIZZYPYX
						Nadi	NFFNYPYX
						Port Moresby	AYPYYMYX
MID REGION							
Baghdad*	ORBS	**UAAW31**	BAGHDAD/Saddam Intl*	ORBS	HH + 50	**BANGKOK**	VTBBYPYX
				ORMM	(HH + 20)	SINGAPORE	WSZZYPYM
						Bahrain	OBZZYPYX
						Beirut	OLLYPYX
						Delhi	
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
						Tehran	OIZZYPYX
Bahrain	OBBI	**UABN31**	BAHRAIN/Intl	OBBI	HH +50	**BANGKOK**	VTBBYPYX
			KUWAIT/Intl	OKBK		SINGAPORE	WSZZYPYM
			ABU DHABI/Abu Dabi Intl	OMAA		Baghdad	ORBSYPYX
			MUSCAT/Seeb Intl			Beirut	OLLLYPYX
						Delhi	VIDPYPYX
						Jeddah	OEZZYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
						Tehran	OIZZYPYX
Beirut*	OLBA	**UALB31**	BEIRUT/Beirut Intl*	OLBA	HH + 00	**BANGKOK**	VTBBYPYX
			DAMASCUS/Damascus Intl*	OSDI	(HH + 30)	SINGAPORE	WSZZYPYM
			AMMAN/Qeen Alia Intl*	OJAI		Abu Dhabi	OMZZYPYX
						Baghdad	ORBSYMYX
						Bahrain	OBZZYPYX
						Jeddah	OEJDYPYX
						Tehran	OIZZYPYX

ROBEX Centre		AIREP bulletin and collection area			Bul. Time	DISSEMINATION TO	
Name	**CCCC**	**BUL No.**	**MWO**	**CCCC**		**RODB/ROBEX C.**	**AFTN Address**
Jeddah*	OEJD	**UADS31**	JEDDAH/King Abdul Aziz Intl	OEJN	HH + 50	**BANGKOK**	VTBBYPYX
			SANA'A/Sana'a Intl	OYSN		SINGAPORE	WSZZYPYM
						Abu Dhabi	OMZZYPYX
						Baghdad	ORBBYMYX
						Bahrain	OBZZYPYX
						Beirut	OLLLYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
						Tehran	OIZZYPYX
Tehran*	OIII	**UAIR31**	THERAN/Mehrabad Intl*	OIII	HH + 00	**BANGKOK**	VTBBYPYX
			KABUL/Kabul	OAKB	(HH + 30)	SINGAPORE	WSZZYPYM
						Abu Dhabi	OMZZYPYX
						Baghdad	ORBSYMYX
						Bahrain	OBZZYPYX
						Beirut	OLLLYPYX
						Delhi	VIDPYPYX
						Jeddah	OEJDYPYX
						Karachi	OPZZYPYX
						Kolkata	VECCYPYX
						Mumbai	VABBYPYX

APPENDIX E

ROBEX TABLES

WMO HEADINGS FOR SIGMET BULLETINS USED BY ASIA/PAC METEOROLOGICAL WATCH OFFICES

Explanation of Table

Col. 1: State, name and ICAO location indicator of the MWO

Col. 2: ICAO location indicator of MWO

Col. 3: WMO heading for the WS SIGMET bulletin

Col. 4: WMO heading for the WC SIGMET bulletin (tropical cyclone)

Col. 5: WMO heading for the WV SIGMET bulletin (volcanic ash)

Col. 6: ICAO location indicator of the FIR/CTA served by the MWO

Col. 7: Remarks

APPENDIX E

WMO HEADINGS FOR SIGMET BULLETINS USED BY ASIA/PAC METEOROLOGICAL WATCH OFFICES

MWO location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
AUSTRALIA						
ADELAIDE/Adelaide	YPRM	WSAU31	WCAU31	WVAU31	YMMM	
BRISBANE/Brisbane	YBRF	WSAU31	WCAU31	WVAU31	YBBB	
					YMMM	
DARWIN/Darwin	YDRM	WSAU31	WCAU31	WVAU31	YBBB	
					YMMM	
HOBART/Hobart	YMHF	WSAU31	WCAU31	WVAU31	YMMM	
MELBOURNE/Melbourne	YMRF	WSAU31	WCAU31	WVAU31	YBBB	
					YMMM	
PERTH/Perth	YPRF	WSAU31	WCAU31	WVAU31	YBBB	
					YMMM	
SYDNEY/Sydney	YSRF	WSAU31	WCAU31	WVAU31	YBBB	
					YMMM	
TOWNSVILLE	YBTL	WSAU31	WCAU31	WVAU31	YBBB	
BANGLADESH						
DHAKA/Zia Intl	VGZR	WSBW20, 21, 31	WCBW20, 31		VGFR	
CAMBODIA						
PHNOM-PENH/Pochentong	VDPP				VDPP	MWO not established
CHINA						
BEIJING/Capital	ZBAA	WSCI33			ZBPE	
CHENGDU/Shuangliu	ZUUU	WSCI36				
GUANGZHOU/Baiyun	ZGGG	WSCI35			ZGZU	
KUNMING/Wujiaba	ZPPP	WSCI36			ZPKM	
LANZHOU/Chongchuan	ZLLL	WSCI37			ZLHW	
SHANGHAI/Hongqiao	ZSSS	WSCI34			ZSHA	
SHENYANG/Taoxian	ZYTX	WSCI38			ZYSH	
TAIBEI/Taibei Intl	RCTP	WSCI31	WCCI31	WVCI31	RCTP	
URUMQI/Diwopu	ZWWW	WSCI39			ZWUQ	
WUHAN/Tianhe	ZHHH	WSCI35			ZHWH	
HONG KONG/Hong Kong Intl	VHHH	WSSS20	WCSS20	WVSS20	VHHK	

MWO location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA						
PYONGYANG/Sunan	ZKPY				ZKKK	No SIGMET issued
FIJI						
NADI/Nadi Intl	NFFN	WSFJ01,02, …	WCFJ01,02, …	WVFJ01,02, …	NFFF	
FRENCH POLYNESIA						
TAHITI/Faaa	NTAA	WSPF21,22	WCPF21	WVPF21	NTTT	
GUAM (United States)						
GUAM I./Agana NAS	PGUM	WSPQ31-35	WCPN31 WCPQ31-35 WCPS31		KZOA	
INDIA						
CALCUTTA/Calcutta	VECC	WSIN31	WCIN31		VECF	
CHENNAI/Chennai	VOMM	WSIN31	WCIN31		VOMF	
DELHI/Indira Ghandi Intl	VIDP	WSIN31	WCIN31		VIDF	
MUMBAI/Jawaharlal Nehru Intl	VABB	WSIN31	WCIN31		VABF	
INDONESIA						
BIAK/Frans Kaisieppo	WABB	WSID23	WCID23	WVID23	WABZ	
DENPASAR/Ngurah Rai (Bali Intl)	WRRR	WSID22	WCID22	WVID22	WRRZ	
JAKARTA/Soekarno-Hatta Intl	WIII	WSID20	WCID20	WVID20	WIIZ	
UJUNG PANDANG/Hasanuddin	WAAA	WSID21	WCID21	WVID21	WAAZ	
JAPAN						
TOKYO/New Tokyo Intl	RJAA	WSJP31	WCJP31	WVJP31	RORG RJTG	
LAO PEOPLE'S DEMOCRATIC REPUBLIC						
VIENTIANE/Wattay	VLVT	WSLA31		WVLA31	VLVT	Not confirmed
MALAYSIA						
KOTA KINABALU/Kota Kinabalu Intl	WBKK	-	-	-	WBFC	
KUALA LUMPUR/Kuala Lumpur Intl	WMKK	WSMS31	WCMS31	WVMS31	WMFC	
MALDIVES						
MALE/Hulule	VRMM	WSMV31			VRMM	

MWO location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
MONGOLIA ULAN BATOR/Ulan Bator	ZMUB	WSMO31			ZMUB	Not confirmed
MYANMAR YANGON/Yangon Intl	VYYY	WSBM31	WCBM31		VYYY	Not confirmed
NAURU NAURU I./Nauru	ANAU				ANAU	No Information
NEPAL KATHMANDU/Tribhuvan Intl	VNKT	WSNP31			VNSM	Not confirmed
NEW ZEALAND NEW ZEALAND/Wellington ~~Intl~~	NZKL	WSNZ21 WSPS21	WCNZ21 WCPS21	WVNZ21 WVPS21	NZZO NZZC	
NORTHERN MARIANA ISLANDS (United States) SAIPAN I. (OBYAN)/Saipan I.(Obyan) Intl	PGSN					No Information
PAKISTAN KARACHI/Quaid-E-Azam Intl LAHORE/Lahore	OPKC OPLA	WSPK31 WSPK31	WCPK31		OPKR OPLR	
PAPUA NEW GUINEA PORT MORESBY/Jacksons	AYPY	WSNG20	WCNG20	WVNG20 WVNG01	AYPY	
PHILIPPINES MANILA/Ninoy Aquino Intl	RPLL	WSPH31	WCPH31	WVPH31	RPHI	
REPUBLIC OF KOREA INCHEON/Incheon Intl	RKSI	WSKO31	WCKO31	WVKO31	RKRR	
SINGAPORE SINGAPORE/Singapore Changi	WSSS	WSSR20	WCSR20	WVSR20	WSJC	
SOLOMON ISLANDS HONIARA/Henderson	AGGH				AGGG	No Information

* Operational monitoring coverage south of 60˚S is limited due to the lack of information

MWO location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
SRI LANKA						
COLOMBO/Katunayake	VCBI	WSSB31	WCSB31		VCBI	
THAILAND						
BANGKOK/Bangkok Intl	VTBD	WSTH31	WCTH31	WVTH31	VTBB	
UNITED STATES						
ANCHORAGE/Anchorage Intl	PANC	WSPN01 WSPN31 WSPN41		WVAK20-24	PZAN	
HONOLULU/Honolulu Intl	PHFO		WCPA31-35 WCPS31		KZOA	
(JUNEAU, Alaska)	*PAJN*	*WSPN01*			*PZAN*	
(KANSAS CITY/Missouri) (National Aviation Weather Advisory Unit)	KKCI	WSPN01-15			KZOA	
???	*PAWU*	*WSPN47,48*	*WCAK31-35*	*WVAK21-25*		
VIET NAM						
Gialam MWO	VVGL	WSVS31	WCVS31	WVVS31	VVNB VVTS	

APPENDIX F

USE OF WMO ABBREVIATED HEADING

(for use in ROBEX Messages/Bulletins)

1. Each ROBEX bulletin should have a WMO abbreviated heading in accordance with WMO No. 386, Manual on the Global Telecommunication System, Part II – Operational Procedures for the GTS. The symbolic form of the WMO abbreviated heading is as follows:

$T_1T_2A_1A_2$ii CCCC YYGGgg (BBB)

2. Explanation of the symbols

2.1. **$T_1T_2A_1A_2$ii –** This group is used in accordance with WMO No. 386, Manual on the Global Telecommunication System, Part II – Operational Procedures for the GTS, Attachment II-5.

2.1.1 **T_1T_2** - Data type designator, used for OPMET data as follows:

Data type	Abbreviated name	WMO data type designator T_1T_2
Aerodrome reports	METAR SPECI	SA SP
Aerodrome forecasts	TAF: 18 and 24-hour 9 and 12 hour	FT FC
SIGMET information	SIGMET SIGMET for TC SIGMET for VA	WS WC WV
Volcanic ash and tropical cyclone advisories	VAA TCA	FV FK
Air-reports	AIREP	UA
Administrative	ADMIN	NO

2.1.2 **A_1A_2** - Geographical designator, composed of two letters, according to WMO No. 386, Manual on the Global Telecommunication System, Part II – Operational Procedures for the GTS, Attachment II-5, Table C1. The following principles shall apply:

a) For ROBEX bulletins containing OPMET data from a single State or territory, the A_1A_2 designator should be chosen from Table C1, Part I – Country or territory designators;

b) For ROBEX bulletins containing OPMET data from more than one State or territory, a suitable A_1A_2 designator should be chosen from Table C1, Part II – Area Designators;

c) The part of the Table C1, Part II – Area Designators, which is relevant to the ROBEX scheme is reproduced bellow.

A_1A_2	**Country or territory**
AE	Southeast Asia
AF	Africa
AH	Afghanistan
AK	Alaska
AS	Asia
AU	Australia
AW	Near East
AX	Arabian Sea area
BD	Brunei Darussalam
BM	Myanmar
BN	Bahrain
BW	Bangladesh
CI	China
EC	East China Sea area
ER	United Arab Emirates
FE	Far East
GM	Guam Islands
HK	Hong Kong, China
ID	Indonesia
IN	India
IO	Indian Ocean area
IQ	Iraq
IR	Islamic Republic of Iran
JD	Jordan
JP	Japan
KB	Kiribati
KO	Republic of Korea
KP	Cambodia
KR	Democratic People's Republic of Korea
KU	Cook Islands
KW	Kuwait
LA	Lao People's Democratic Republic
LB	Lebanon
ME	Eastern Mediterranean area
MH	Marshall Islands

A_1A_2	**Country or territory**
MS	Malaysia
MU	Macao
MV	Maldives
NC	New Caledonia
NG	Papua New Guinea
NP	Nepal
NV	Vanuatu
NW	Nauru Island
NZ	New Zealand
OC	Oceania
OM	Oman
PA	Pacific area
PF	French Polynesia
PH	Philippines
PK	Pakistan
PN	North Pacific area
PQ	Western North Pacific
PS	South Pacific area
PW	Western Pacific area
PZ	Eastern Pacific area
QT	Qatar
SB	Sri Lanka
SD	Saudi Arabia
SJ	Sea of Japan area
SO	Solomon Islands
SR	Singapore
SS	South China Sea area
SY	Syrian Arab Republic
TH	Thailand
TM	Timor
TO	Tonga
TV	Tuvalu
US	United States of America
VS	Vietnam
YE	Republic of Yemen
ZM	Western Samoa

2.1.3 **ii** - series number of the bulletin. It shall be a number with two digits used to differentiate two or more bulletins with the same TTAA issued by an originator or a compiler of bulletins. "ii" will be unique to each bulletin.

2.1.3.1 The rules of assigning "ii" to bulletins are as fiollows:

- Bulletins containing reports prepared at the main synoptic hours for the stations included in the Regional Basic Synoptic Networks or stations included in the Regional Basic Climatological Networks shall be compiled into bulletins with ii in the series 01 to 19

- Bulletins containing "additional" data as defined in Resolution 40 (Cg-XIII) shall be compiled into bulletins with ii above 19.

2.1.3.2 For most of the ROBEX bulletins "ii" should be selected from the set "20 – 39". In case of METAR/TAF bulletins, ROBEX centres issuing only one bulletin should use "31", whilst ROBEX centres issuing more than one bulletin should use "31", "32", etc. AIREP bulletins should bear "31". SIGMET and advisory messages, which are required globally, may use ii numbers of the set "01 – 19" or "20 – 39".

2.2. **CCCC** - ICAO location indicator, according to Location Indicators, ICAO Doc 7910, of the ROBEX centre preparing the ROBEX Bulletin, or of the originator (aeronautical meteorological station, aerodrome meteorological office or NOC).

2.3. **YYGGgg –** Date-time group. To be used as follows:

2.3.1 YY - Day of the month.

2.3.2 GGgg - Hours and minutes

- For METAR bulletins/messages: the standard time of observation in UTC.

- For TAF bulletins: the full hour in UTC (the last two digits shall be 00) preceding the transmission time.

- For all other bulletin/messages - the time of compilation in UTC.

2.4. **BBB -** Optional group indicating an amended, corrected or delayed bulletin.

2.4.1 An abbreviated heading defined by TTAAii CCCC YYGGgg shall be used only once. Consequently, if this abbreviated heading has to be used again for an addition, a correction or an amendment, it shall be mandatory to add an appropriate BBB indicator, which shall be added after the date-time group. The indicator BBB shall be used as defined below:

- RRx – for delayed routine meteorological messages/bulletins;
- CCx – for corrections to previously relayed messages/bulletins;
- AAx – for amendments to TAF messages/bulletins;
- Pxx – for segmenting a large set of information into several bulletins.

The "x" above is an alphabetic character of A through X, indicating the sequential number of the irregular bulletin of certain type. For instance, for amended TAFs, AAA is used for the first amendment, AAB for the second, AAC for the third, etc; for delayed METARs or TAFs, RRA is used for the first delayed message, RRB for the second, etc.; and, for corrections to any OPMET bulletin, CCA is used for the first correction, CCB for the second, etc.

2.4.2 The current limitation of the AFTN regarding the length of the bulletins is up to 1500 characters. Bulletins longer than this will be split into two parts; in such a case, the optional group Pxx should be used to indicate the corresponding part of the bulletin, e.g., PAA – first part, PAB – second part, etc.

APPENDIX G

EXCHANGE OF OPMET DATA BETWEEN THE MID, ASIA AND AFI REGION

CAIRO AMBEX ODREP

1. **Outgoing responsibilities**

1.1 Prepare TAF bulletin FTAF38 containing Cairo (HECAYMYX), Luxor (HELXYMYX), Khartoum (HSSSYMYX), Alger (DAMMYMYX), Tunis (DTTAYMYX), Benghazi (HLLBYMYX) and Tripoli (HLLTYMYX) and send it to Jeddah (OEJDYPYX) ODREP.

2. **Incoming Responsibilities**

2.1 Relay Jeddah TAF bulletin FTAS31 to Alger and Cairo TCCs.

2.2 Relay Beirut TAF bulletin FTAW31 to Cairo, Tripoli and Tunis.

2.3 Relay Bahrain TAF bulletin FTPE31 to Cairo and Khartoum.

2.4 Relay Bangkok TAF bulletin FTAE31 to Cairo.

DAKAR AMBEX ODREP

1. **Outgoing responsibilities**

1.1 Prepare TAF bulletin FTA038 containing Conakry (GUCYYMYX), Dakar (GOOYYMYX), Freetown (GFLLYMYX), Lagos (DNMMYMYX), Las Palmas (GCLPYMYX), Luanda (FNLUYMYX), Nouakchott (GQNNYMYX) and Tenerife Sur (GCTSYMYX) and send it to Rio de Janeiro.

2. **Incoming responsibilities**

2.1 Prepare TAF bulletin FTSA38 containing Ascuncion, Buenos Aires, Campo Grande, Mendoza, Montevideo, Recife, Rio de Janeiro, Salvador, Santiago and Sao Paulo and send it to Abidjan, Casablanca, Dakar, Lagos and Luanda.

NAIROBI AMBEX ODREP

1. **Outgoing Responsibilities**

1.1 Prepare TAF bulletin FTEA38 containing Nairobi (HKNAYPYX), Mombasa (HKMOYMYX), Dar-es-Salam (HTDAYMYX), Kilimanjaro (HTKJYMYX), Entebbe (HUENYMYX) and Mahé (FSIAYMYX) and send it to Jeddah (OEJDYPYX) ODREP and Bombay (VABBYPYX).

1.2 Relay Antananarivo TAF bulletin FTI031 to Jeddah ODREP and Bombay.

1.3 Relay Addis Ababa TAF bulletin FTEA31, Antananarivo TAF bulletin FTI031, Lusaka TAF bulletin FTAP31 and Nairobi TAF bulletin FTEA32 via GTS link Nairobi-Offenbach to EUR (LFZZ).

2. **Incoming Responsibilities**

2.1 Relay Bombay TAF bulletin FTAS31 to Nairobi.

2.2 Relay Jeddah TAF bulletin FTAS31 to Antananarivo TCC and to Nairobi, Dar-es-Salaam and Mahe.

2.3 Receive via GTS from Offenbach selected MOTNE TAF bulletins and relay them as follows:

MOTNE Bulletins/ Bulletins MOTNE	To aerodromes / Vers les aérodromes					
	Addis Ababa	Djibouti	Harare	Khartoum	Lusaka	Nairobi
FTBX31						x
FTDL31						x
FTFR31		x				x
FTGR31	x			x		x
FTIY31	x					x
FTNL31				x		x
FTSW31						x
FTUK31			x		x	x

APPENDIX H

ROBEX FOCAL POINTS BY ASIA/PAC STATES - *2004*

STATE/ ADMINISTRATION	NAME/DESIGNATION AND ADDRESS	TEL/FAX/SITA AND E-MAIL
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