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Coordination between the MET and ATM Authorities
in Hong Kong, China

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**MET/ATM CO-ORDINATION SEMINAR FOR
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Discussion Topic 2: ICAO provisions and guidance materials relating to MET and ATM coordination arrangements

**COORDINATION BETWEEN THE MET AND ATM AUTHORITIES
IN HONG KONG, CHINA**

(Presented by Hong Kong, China)

SUMMARY

An overview of the coordination arrangements between the MET and ATM authorities in respect of provision of aeronautical meteorological services in Hong Kong, China will be provided. In particular, the setting up of a document on the agreed coordination arrangements will be described and the coordination issues identified and how they were addressed will be presented.

1. Introduction

1.1 A number of ICAO standards and recommended practices (SARPs) of Annex 3, 11 and 12 explicitly require agreement between the MET and ATM authorities on coordination arrangements. For example, paragraph 4.2 of Annex 3 recommends that “*An agreement between the meteorological authority and the appropriate ATS authority should be established to cover, amongst other things:*

- a) *the provision in air traffic services units of displays ...;*
- b) *the calibration and maintenance of these displays/instruments;*
- c) *...*
- d) *..., supplementary visual observations ... made by air traffic services personnel ...;*
- e) *meteorological information obtained from aircraft ...;*
- f) *....*

It is apparent such coordination arrangements involve different aspects, including exchange of MET information between MET and ATM, provision of facilities, and other operational arrangements.

1.2 While such coordination arrangements have been established between the Hong Kong Observatory (HKO) and Hong Kong Civil Aviation Department (CAD), the MET and ATM authorities in Hong Kong, China, based on exchanges of correspondence and meetings, to document such coordination arrangements more systematically and to achieve a common understanding between the two authorities, a document entitled “*Agreed Coordination Arrangements between the Hong Kong Observatory (HKO) and Hong Kong Civil Aviation Department (CAD) in Respect of the Provision of Meteorological Service for International Air Navigation*” (ACA) was set up in 2005. Guidance as recommended in the “*Manual on*

Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services" (Doc 9377) has been taken into consideration in setting up the document. This document also serves as a documented proof on the coordination arrangements between the two authorities as required by the ICAO Universal Safety Oversight Audit Programme (USOAP) audit.

2. Agreed coordination arrangements between the MET and ATM authorities

2.1 The ACA has two parts: (a) high-level institutional arrangements; and (b) detailed practical coordination arrangements in the form of an appendix:

- (a) The high-level institutional arrangements delineate the responsibilities between the MET and ATM authorities in respect of provision of meteorological service for international air navigation, including amendments and implementation of amendments to the ICAO Annexes, notification of differences in respect of the relevant SARPs, Regional Supplementary Procedures and Air Navigation Plan. In addition, the requirement for regular coordination meetings between the two authorities to review the coordination arrangements, and to make changes to the ACA as a result of the meetings is also stated (see Appendix I of this paper);
- (b) Detailed practical coordination arrangements in connection with those SARPs which explicitly require the agreement between the civil aviation and meteorological authorities are documented after reviewed jointly by HKO and CAD. Particular attention was put on the exchange of MET information between the operational units:
 - (i) MET to ATM: a list of the MET information supplied to the ATS, AIS and SAR units, modelled on the sample given in Doc 9377, is tabulated (see Appendix II of this paper). Details including the content, format, frequency, terminology, destination and communication means are provided;
 - (ii) ATM to MET: passing of pilot reports, especially windshear and turbulence reports, and special weather observations made by ATC, to the Airport Meteorological Office (AMO) is documented with reference to the relevant SARPs (see Appendix III of this paper). Details including the reporting content and format, means of communication, and timeliness requirements, are provided together with the document reference of the agreement (e.g. minutes of meeting).

2.2 While most of the detailed practical coordination arrangements between the MET and ATM had previously been agreed and therefore the ACA appendix can simply make reference to the relevant correspondence and minutes of meeting, further clarification of some of the technical details was found to be necessary. The establishment of the ACA is considered useful to ensure a common understanding between the two authorities, given the relatively small efforts involved.

3. Action

3.1 The meeting is invited to note the information provided in this paper and exchange views on the subject.

SAMPLE

**Agreed Coordination Arrangements between the
Hong Kong Observatory (HKO) and
Hong Kong Civil Aviation Department (CAD)
in Respect of the Provision of Meteorological Service for
International Air Navigation**

1. This document lays out the coordination required for the implementation of standards and recommended practices (SARPs) and procedures contained in Annexes 3, 11, 12, and 15 to the Convention on International Civil Aviation, Regional Supplementary Procedures – Meteorology and relevant provisions in the Air Navigation Plan of the ASIA/PAC Regions.
2. HKO is the meteorological authority in Hong Kong designated by China, in accordance with Annex 3 to the Convention on International Civil Aviation, to provide the meteorological facilities and services for international air navigation. The above services are provided by HKO in accordance with the relevant standards contained in Annexes to the Convention on International Civil Aviation, and WMO Technical Regulation and Manuals on meteorological service for international air navigation.
3. To support the provision of aeronautical meteorological service, HKO establishes and operates the Airport Meteorological Office (AMO) which serves as the Aeronautical Meteorological Station and Aerodrome Meteorological Office for the Hong Kong International Airport, and serves as the Meteorological Watch Office for the Hong Kong Flight Information Region. HKO installs, operates and maintains the necessary meteorological equipment and facilities for the purpose of contributing towards the safety, regularity and efficiency of international air navigation. HKO also ensures that there are sufficient qualified personnel for the provision of such service.
4. The Hong Kong Civil Aviation Department (CAD), the civil aviation authority in Hong Kong, China, will facilitate HKO to provide the aeronautical meteorological service by providing necessary information and facilities.
5. HKO will take lead in coordinating, implementing amendments and notifying ICAO (via CAD) of the differences in respect of SARPs of Annex 3, Regional Supplementary Procedures – Meteorology, and meteorology section of the Air Navigation Plan of the ASIA/PAC Regions. CAD will take lead in coordinating, implementing amendments and notifying the differences in respect of relevant SARPs of the other ICAO Annexes, relevant sections in the Regional Supplementary Procedures and Air Navigation Plan of the ASIA/PAC Region.
6. Agreed arrangements on operations which require coordination between HKO and CAD are listed in the Appendix of this document.

Appendix 1

7. To ensure close coordination between HKO and CAD in the aspect of aeronautical meteorological service, both parties agree to hold regular coordination meetings to review the coordination arrangements. Changes in coordination arrangements resulting from these meetings will be documented and the Appendix will be updated accordingly.

Assistant Director
(Aviation Weather Services)
Hong Kong Observatory

Assistant Director-General
(Air Traffic Management)
Civil Aviation Department

(Name)
Date

(Name)
Date

SAMPLE**Appendix to Agreed Coordination Arrangements between the HKO and CAD****Table 1. Aeronautical meteorological information supplied to ATM units in Hong Kong**

<i>Information</i>	<i>Distributor</i>	<i>Destination</i>	<i>Frequency</i>	<i>Communication means</i>
Local routine reports (MET REPORT) with trend type forecasts and windshear/turbulence warnings for ATIS	Airport Meteorological Office (AMO), Hong Kong Observatory (HKO)	ATC TWR ATCC Backup ATC (via AIDB)	Half-hourly. Windshear and turbulence warnings are updated every minute, when warranted	AIDB AMIDS
Local special reports (SPECIAL) with trend-type forecasts	AMO	ATC TWR ATCC Backup ATC (via AIDB)	When warranted	AIDB AMIDS
Routine reports (METAR with TREND), including alternate aerodromes	AMO	ATC TWR ATCC Backup ATC (via AIDB and AFTN)	Half-hourly	AIDB AMIDS AFTN (not for alternate aerodrome reports)
Special reports (SPECI with TREND *), including alternate aerodromes	AMO	ATC TWR ATCC Backup ATC (via AIDB and AFTN)	When warranted	AIDB AMIDS AFTN (not for alternate aerodrome reports)
METPAGE (consists of HKIA MET observations, 9-hour TAF for HKIA and Macau MET observations, and windshear/turbulence warnings)	AMO	ATC TWR ATCC Backup ATC (via AIDB)	Half-hourly or when SPECIs are issued. Windshear and turbulence warnings are updated every minute, when warranted.	AIDB AMIDS
....

Acronyms

AAD – Alphanumeric Alarm Display

AFTN – Aeronautical Fixed Telecommunication Network

AIC – Aeronautical Information Centre

AIDB – Aeronautical Information Database

AMIDS – Aviation Meteorological Information Dissemination System

AMOS – Aerodrome Meteorological Observing System

ATC TWR – Air Traffic Control Tower

ATCC – Air Traffic Control Centre

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SAMPLE

Appendix to Agreed Coordination Arrangements between the HKO and CAD

ICAO Reference	ICAO Standards, recommended practices, procedures, provisions	Agreed Arrangements	Coordination between	Update history/ Documented reference
<p>Annex 3 4.2</p> <p>Chapter 4 Rec.</p>	<p>Agreement between air traffic services authorities and meteorological authorities</p> <p>An <i>agreement between the meteorological authority and the appropriate ATS authority</i> should be established to cover, amongst other things:</p> <p>.....</p> <p>e) meteorological information obtained from aircraft taking off or landing (for example, on wind shear); and</p> <p>....</p>	<p>.....</p> <p>(e) PASSING OF PILOT REPORTS TO HKO (para. 2.4 of notes of CAD/HKO coordination meeting held on 20/1/05 (attachment 4), (reproduced below for easy reference:</p> <ol style="list-style-type: none"> 1. ATMD should pass pilot reports of significant wind shear (i.e. 15kt headwind/tailwind change or above) and turbulence (moderate or above) to AMO as soon as possible whenever: <ol style="list-style-type: none"> i) wind shear reported is 30 kt or more; ii) severe turbulence is reported; iii) a pilot executes a go-around due to wind shear; iv) a report of significant wind shear or turbulence is received after a period of 1 hour with no reports. 2. Pilot reports of wind shear or turbulence are faxed to HKO as soon as possible in accordance with the agreed procedures. In addition, a summary of the reports is sent to HKO at the end of each month. 3. ATMD would also pass details of null reports from pilots to AMO when wind shear is forecast. If a pilot report of significant wind shear/turbulence is received, HKO will immediately issue a forecast and reported wind shear/turbulence warning valid for 1 hour from the report time for broadcast on ATIS.) <p>.....</p>	<p>HKO and ATS (CAD)</p>	<p>....</p> <p>(e) notes of CAD/HKO coordination meeting held on 20/1/05. Memo (78) in RAC/3/9 dated 8.2.2005</p> <p>....</p>