INTERNATIONAL CIVIL AVIATION ORGANIZATION

WESTERN AND CENTRAL AFRICA OFFICE (WACAF)
ICAO Regional Seminar on ATS/MET/Pilots Coordination
(Yaoundé, Cameroon, 23 – 25 August 2010)

Agenda Item 1: General

ATS OBJECTIVES AND MET INFORMATION REQUIRED FOR AIR NAVIGATION

(Presented by the Secretariat)

Summary

This paper introduces the seminar on the ATS/MET/Pilots coordination in 2010 and provides a background on key issues on the agenda by focusing on the need for coordination between the Air Traffic Management Authority and Meteorological Authority for the provision of meteorological services for safety, regularity and efficiency of air navigation.

Reference:
• Annex 3 - Meteorological Service for International Air Navigation
• Annex 11 - Air Traffic Services
• Annex 12 - Search and Rescue
• Annex 15 - Aeronautical Information Services
• Doc. 9377 -AN/915 Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services
• Doc. 4444 PANS-ATM - Rules of the Air and Air Traffic Services
• Doc. 9766 - Handbook on the international airways volcano watch

1. Introduction

1.1 Conclusion 14/42 of the AFI Planning and Implementation Regional Group 14th Meeting (APIRG/14, Yaoundé, 2003), urges ICAO to organize in the AFI Region, together with WMO, seminars on ATS/MET/Pilot coordination. Moreover, Conclusion 17/64 of APIRG/17 Meeting (Ouagadougou, 2-6 August 2010), encourages states in the region to organize such seminars in regular basis to help improve availability of non-regular OPMET data.

1.2 It is also recalled that the 7th AFI Regional Air Navigation Meeting, 1997 in Abuja and the restricted Regional Air Navigation Meeting (COM/MET/RAC) Lome, 1988 had also recommended to ICAO to hold seminars on ATS/MET/Pilot coordination. In response to these decisions, the ICAO Regional Office for West and Central Africa (WACAF) had organized a number of seminars on ATS/MET/Pilot coordination in Dakar in November 1991, at EAMAC Niamey, Niger in March 1998, in Douala, Cameroon in September 2001 and Niamey, Niger in April 2006. The seminars were focused on the availability and procedures of regular and special aircraft report (AIREP).

1.3 Coordination between air traffic services and aeronautical meteorological services is addressed in several ICAO documents, including in Annexes 3, 11, 12 and 15 and in Docs. 4444-PANS-RAC, 9377 Manual of coordination between air traffic services, aeronautical information

services and Aeronautical Meteorology services and 9766 Handbook on the international airways volcano watch.

1.4 This seminar has become necessary because of significant changes occurred in Annex 3 (Amendment 75 - Abolition of regular voice AIREP, Doc 9377 - 4th edition 2008, Doc 9766 - change Appendix 1, etc. ..).

2. Discussion

2.1 The objectives of ATS are to:

a) prevent collisions between aircraft in the air or on the manoeuvring area of an aerodrome;

b) prevent collisions between aircraft on the manoeuvring area and obstructions on that area;

c) expedite and maintain an orderly flow of air traffic;

d) provide advice and information useful for the safe and efficient conduct of flights; and

e) notify appropriate organizations regarding aircraft in need of search and rescue aid and assist such organizations as required.

2.2 It is clear that in order to achieve these objectives effectively, ATS units require a great deal of meteorological information and service. This has been recognized in the specifications for the meteorological service to be provided for international air navigation, which describe how operators, flight crew members, ATS units, search and rescue services centres, airport management and others concerned with the conduct of international air navigation are to be supplied with the meteorological information necessary for the performance of their respective functions.

2.3 The meteorological information required by ATS units can be divided into two kinds:

a) that needed to carry out air traffic control functions (e.g. surface wind data for establishing runways in use, weather radar data for guiding aircraft, and upper-air forecasts for tactical decision-making); and

b) that needed to provide information to aircraft in flight (en route, landing or taking off).

2.4 The meteorological data required by ATS units to carry out these two functions have grown over the years in number and complexity. With the use of voice communications (HF and VHF) and the implementation of data link communications, ATS units have become an important intermediary for the transmission of meteorological data to aircraft. Even when information is broadcast to aircraft, ATS units are usually responsible for some of these broadcasts (e.g. routine broadcasts of meteorological information for aircraft in flight (VOLMET broadcasts), and automatic terminal information service (ATIS) broadcasts) and also for receiving meteorological information from aircraft through air-reports (AIREPs). The latter are very important since the occurrence of certain weather phenomena, such as turbulence, icing and low-level wind shear, can, to a large extent, only be diagnosed and confirmed in this manner.

2.5 The lowering of aerodrome operating minima and the implementation of all-weather operations have increased the need for accurate and timely information on local weather conditions at aerodromes for which modern, automated meteorological instrumentation and observation systems are used. The exclusion of weather echoes from many ATS radar systems has made it necessary to provide information to controllers from weather radar and weather radar networks. Much of this information has been integrated with processed meteorological satellite data. In order for centralized

ATS units to achieve efficient air traffic flow management and track selection, digital grid point upper wind and upper-air temperature forecasts from the world area forecast system (WAFS) have become necessary input for air traffic control computers.

1.6 To ensure that exchanges of meteorological information take place speedily and effectively, there is a need for efficient coordination between air traffic and meteorological services and their respective authorities. Requirements for such coordination are stated or implied in many parts of Annex 3 — *Meteorological Service for International Air Navigation*, Annex 11 — *Air Traffic Services*, Annex 12 — *Search and Rescue* and the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444).

2.7 In order to discuss the coordination between air traffic and meteorological services, it is necessary to provide adequate background information concerning:

a) the organization of air traffic and meteorological services;

b) the meteorological information to be provided to ATS units and search and rescue services centres by meteorological offices and stations; and

c) the meteorological information obtained by ATS units from sources other than the aeronautical meteorological offices and stations (e.g. air-reports from various phases of flight).

2.8 It is envisaged that the current ATS system will be fundamentally improved through extensive implementation of the communications, navigation and surveillance (CNS) technologies to accommodate the expected increase in flight operations in all regions. The ongoing planning for and implementation of the new air traffic management (ATM) system will also provide the necessary support to accommodate this increase in air traffic. In view of this, the manual contains a chapter which outlines the sources of, and the plans and future requirements for, meteorological support to the new ATM system.

3. Conclusion

3.1 This introductory paper gave a background on the main topics of the agenda while focusing on the objectives of air traffic services, the two categories of MET information provided to ATS and developments in meteorological requirements for ATS.

3.2 Participants are invited to note the objectives of air traffic services, the developments in meteorological requirements for ATS.