



International Civil Aviation Organization

**The First Meeting of the ICAO Asia/Pacific Seamless ATM Planning Group
(APSAPG/1)**

Bangkok, Thailand, 31 January – 03 February 2012

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- Agenda Item 3: Drivers for a Seamless ATM Environment**
Agenda Item 4: Asia/Pacific Seamless ATM Status and Strategies

CIVIL/MILITARY COOPERATION

(Presented by the Secretariat)

SUMMARY

This paper presents information on civil/military cooperation drivers, and strategies relevant to Seamless ATM. This paper relates to –

Strategic Objectives:

A: *Safety – Enhance global civil aviation safety*

C: *Environmental Protection and Sustainable Development of Air Transport – Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment*

Global Plan Initiatives:

GPI-1 Flexible use of airspace

GPI-6 Air traffic flow management

1. INTRODUCTION

1.1 The crucial role of civil/military cooperation to Seamless ATM was highlighted at the ICAO Asia/Pacific Seamless Air Traffic Management (ATM) Symposium and Ad Hoc Meeting (Bangkok, Thailand, 15-17 August 2011). Thus a special focus on this area was required for the successful planning of Seamless ATM-compliant systems.

1.2 Article 3 (d) of the *Convention on International Civil Aviation* (Doc 7300) states:

The Contracting States undertake, when issuing regulations for their state aircraft, that they will have due regard for the safety of navigation of civil aircraft”.

2. DISCUSSION

ICAO References

2.1 Annex 11, Chapter 2, 2.15 and 2.16 contain provisions for co-ordination between military authorities and air traffic services and co-ordination of activities potentially hazardous to civil aircraft, including, *inter alia*:

- The objective of the co-ordination are the best arrangements which will avoid hazards to civil aircraft and minimize interference with the normal operations of such aircraft (i.e.: avoid closure or realignment of established ATS routes,

blocking of the most economic flight levels, or delays of scheduled aircraft operations, unless no other options exist);

- The size of the airspace designated for the conduct of military activities should be kept as small as possible; and
- Coordination shall be effected early enough to permit timely promulgation of information;
- Direct communication between the appropriate ATS authority or air traffic services unit and the organization or unit conducting the activities should be provided.

2.2 The following documents provide information relevant to civil/military cooperation:

- a) Annex 2 — *Rules of the Air* contains rules relating to the flight and manoeuvre of aircraft regarding Article 12 of the Convention, which includes provisions on the coordination with military authorities for reason of a State's territorial integrity and sovereignty, namely for air defence reasons.
- b) Doc 4444 — *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM) contains procedures applicable to other in-flight contingencies, such as strayed or unidentified aircraft, that involve coordination with military authorities.
- c) Doc 9443 — *Manual Concerning Interception of Civil Aircraft*;
- d) Doc 9554 — *Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations* details the coordination requirements between military units that may affect flights of civil aircraft and ATS units;
- e) Doc 9750 — *Global Air Navigation Plan* contains 23 specified Global Plan initiatives (GPI) that includes GPI-1 'Flexible Use of Airspace'.

2.3 ICAO has recently published two Circulars germane to Civil/Military Cooperation:

- a) Circular 328 *Unmanned Aircraft Systems*; and
- b) Circular 330 *Civil/Military Cooperation in Air Traffic Management*.

Common Interests

2.4 Civil and military parties have common interests, including:

- a) access to airspace normally used by the other party;
- b) the efficiency of civil defence and Search and Rescue (SAR) operations, police, security, humanitarian aid and national emergencies;
- c) the operation of Unmanned Aircraft Systems (UAS);
- d) the need to take into account 'non-compliant' military or other State aircraft using special handling status (STS); given the increasingly complex civil aircraft equipage requirements.
- e) efficient handling by civil Air Navigation Services (ANS) of special military manoeuvres, such as formations and air refueling; and
- f) assurance of civil/military Air Traffic Control (ATC) system inter-operability and connectivity in a modern network-centric environment.

Airspace

2.5 Flexible Use Airspace (FUA) is an airspace management concept based on the principle that airspace should not be designated as purely civil or military, but rather as a continuum in which all user requirements are accommodated to the greatest possible extent. The Seamless ATM Ad Hoc meeting noted the following Special Use Airspace (SUA) principles:

- many so-called ‘prohibited’ areas may be more correctly described as restricted areas as they can have military and even civil operations from time to time;
- restricted areas may not be designated over the high seas or in airspace of undetermined sovereignty in accordance with the Annex 2 definition;
- restricted areas need to be as small as practicable, while encompassing the activity therein;
- danger areas may be considered in lieu of restricted areas, if the pilot can determine the nature of the hazard; and
- SUA should only be activated when required (activation by NOTAM, rather than the reverse, as it is easier for the status to be discerned by flight planners).

2.6 China advised the Ad Hoc meeting that collaboration with the military was a priority to try and release more airspace and operate on a more flexible basis, particularly to increase temporary routes and reduce permanently segregated airspace.

2.7 Hong Kong, China stated that there were differing levels of civilian access to military airspace, and uncertainty of information from military for strategic or pre-tactical planning.

2.8 Australia noted that they were maximising the use of airspace through review – resulting in a reduction of Australian restricted areas from 81 to 15. In addition, different levels of conditional entry status had been appended to all restricted areas by the independent airspace authority, providing much greater flexibility of usage.

2.9 India stated that 35% of Indian airspace was ‘reserved’ for military use, so the growth in air traffic had been highly challenging to manage. Conflicting user requirements and equipment were noted as an issue, with civil, military and space users.

2.10 Thailand also noted that there was cooperation with the military, although about 70% of Thailand’s airspace was affected by SUA.

Information Sharing

2.11 The 47th Director’s General of Civil Aviation (DGCA) Conference urged greater participation of military authorities in civil forums to facilitate optimum utilization of airspace. Thus civil representatives should consider including their military counterparts in their delegations whenever possible. Military cooperation cells in civil Air Traffic Control (ATC) Centres to ensure appropriate civil/military tactical communication was also encouraged.

2.12 The Ad Hoc meeting recognised that ATM surveillance data sharing between the civil and military can facilitate Collaborative Decision-Making (CDM), a vital component of Air Traffic Flow Management (ATFM). Moreover, data sharing inevitably improved confidence in neighbouring parties, which can result in reduced ATC separations and improved systems.

2.13 Thailand was establishing a civil/military data-sharing and CDM framework, and military participation in the new Bangkok ATM Centre was expected.

2.14 Enhanced safety nets and safety investigations can be a significant additional benefit of ATC surveillance data-sharing. This is evident in the Indonesian-Australian ADS-B (Automatic Dependent Surveillance – Broadcast) ITSAP (Indonesian Transport Safety Package) programme.

2.15 Airservices Australia was working with the Australian military to synchronise training, procurement of ATM systems and ATM operating procedures.

Civil/Military Cooperation Forums

2.16 The Global Forum on Civil/Military Cooperation was held in Montréal from 19 to 21 October 2009. The results of the Forum are summarized as follows:

- a) Peace and stability are essential preconditions for social and economic development;
- b) Mutual trust and confidence are principle requirements for collaboration between civil and military authorities;
- c) Safety, security and efficiency are common civil and military values;
- d) Efficiency for civil aviation signifies increased capacity, fewer delays, reduction of cost, fuel burn and emissions;
- e) Civil-military cooperation is essential at national, regional and international levels;
- f) Airspace is a continuum and a common limited resource for all civil and military users;
- g) Wide awareness and application of flexible use of airspace principles form a good common basis for global civil/military ATM coordination;
- h) Civil/military interoperability is essential to optimize safe and efficient use of airspace for all users. Interoperability gaps must be duly addressed by the aviation community as a whole;
- i) A comprehensive global civil/military approach to security and to incident management is needed. The approach taken should build on existing positive experiences which have a potential for further improvement; and
- j) Successful collaboration requires: communication, education, a shared relationship and trust.

2.17 A Civil/Military Cooperation Seminar/Workshop was due to be held in Bangkok, Thailand, from 28 February to 1 March 2012.

2.18 APANPIRG/9 (August 1998) developed the following guidelines (bold text added to highlight the issue concerned):

- a) [**Military**] **Procedures** should, whenever possible, conform to the civil aviation rules and regulations developed by ICAO or the State concerned;
- b) **Aeronautical facilities and ground services** required for civil or military use should ideally be provided jointly or on a common, integrated basis;
- c) **Personnel** in civil and military ATS units should be required to meet equal standards in training and rating, based on applicable ICAO provisions;
- d) Neither the military nor the civil authority should unilaterally establish controlled and/or reserved or restricted **airspace**;

- e) Duplication of effort in **research and development** as well as in practical operations should be avoided and ground facilities, equipment and services should be shared whenever practical.
- f) **Common terminology and abbreviations** should be developed and used by both users of the airspace in order to avoid confusion in communication and correspondence. Such terms and abbreviations should, whenever possible, be those developed and published by ICAO;
- g) **Common rules and procedures** applicable to civil and military air traffic, based on the appropriate provisions of ICAO, should be developed for use by both civil and military aircraft. These rules should, where necessary, be supplemented by specific rules covering particular operational requirements of either user. In addition, these rules should be supplemented by common operating practices and procedures. In so far as they are of concern to both users, these rules and procedures should be published in a manner so as to facilitate cross reference;
- h) Plans regarding the organization and use of **airspace** should be developed collectively by civil and military authorities and take account of the following factors:
 - 1) national security requirements;
 - 2) co-sharing of airspace in the interest of safety, flexibility, efficiency and economy of air traffic;
 - 3) the desirability of joint use of airspace by the provision of suitable services including radar;
 - 4) compatibility of civil and military operations in the same area;
 - 5) the need for keeping airspace reservations and restrictions to a minimum, so that minimal interference with air operations occurs;
 - 6) the need to periodically review and assess the continued requirement for airspace restrictions;
 - 7) the effects of incompatibility between civil and military navigation and communication equipment;
 - 8) the inconvenience caused to each user where conflict of interest occurs between civil and military users;
 - 9) the need for joint consultation prior to the establishment of new aerodromes, military installations, navigation aids and other facilities which, once completed, have an impact on the organization and use of the airspace.
- i) **Military exercises** having an impact on air navigation should be co-ordinated in such a manner that early liaison is established between the exercise planners and the appropriate civil authorities. Except where prevented by security requirements, details of military exercises affecting civil air navigation should be published with an agreed period of advance notification;
- j) Non-sensitive military **data** should be made available for dissemination and publication by civil air traffic service units.

2.19 These guidelines would appear to be just as relevant today as they were in 1998. Notwithstanding this, progress in implementing the provisions in the Asia/Pacific Region appears to be inconsistent. Thus it could be useful for a body such as a Civil/Military Contact Group or the Secretariat to review and update the guidelines, in order to include the key elements of the 1998 guidelines as part of the APSAPG Asia/Pacific Seamless ATM Plan. Incorporation into a formal Plan

endorsed by each Asia/Pacific State for incorporation into national legislation, policies and procedures as appropriate could be a more effective method of promoting essential change in this area.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) taking into account the 2012 Civil/Military Cooperation Seminar/Workshop, discuss whether the guidelines developed by APANPIRG/9 (updated as appropriate) should be reviewed, updated and included as part of the Asia/Pacific Seamless ATM Plan;
- c) discuss which body would be responsible for reviewing and updating the 1998 material if this is considered appropriate;
- d) discuss the mechanisms that may be required to ensure that any agreed civil/military provisions are effectively implemented by States; and
- e) discuss any relevant matters as appropriate.

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