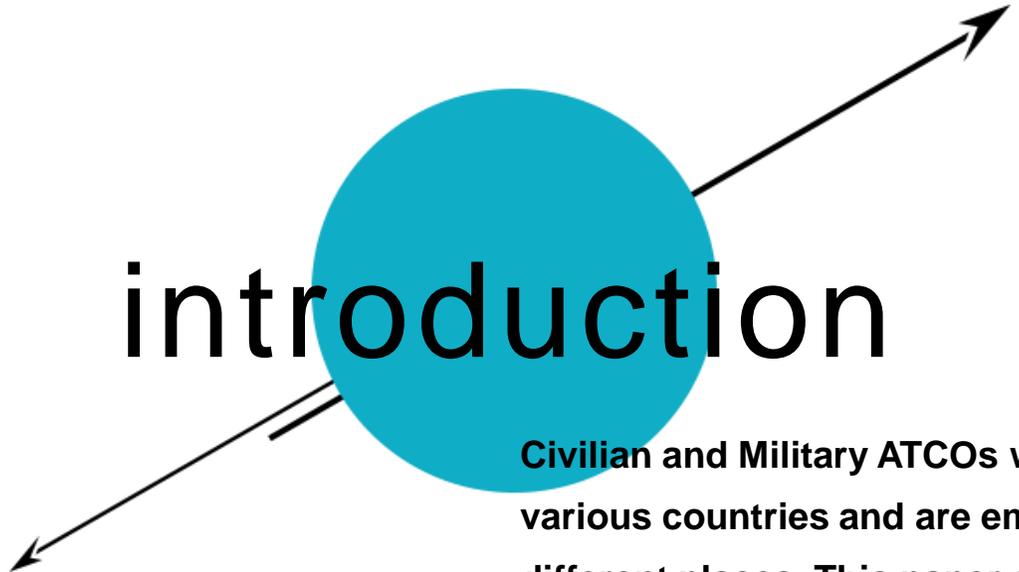




Civil and military integration in the same workspace

Presented by PLC



introduction

Civilian and Military ATCOs work alongside each other in various countries and are employed in a number of different places. This paper explores the different approaches in collaboration between Civil and Military Air Traffic Control, the issues regarding Airspace Management and how each counterpart works to achieve their task.

Aviation users

- There are two major airspace users in the world today civil and military.
- Civil includes; private, commercial and government owned aircraft primarily transporting cargo and passengers.
- Military aviation includes; state-owned aircraft engaged in transport, training, security and defence.
- Both aviation sectors are essential to global stability and economies, although cannot operate simultaneously in the same airspace, thus requiring boundaries and segregation.
- In order for international aviation to operate safely and harmoniously. States have agreed to collaborate ATC services, access of airspace and common regulatory infrastructure.

Convention on international civil aviation

- The 'Convention of International Civil Aviation' was signed in Chicago in 1944 by 52 States.
- Pending ratification of the convention by 26 States, the Provisional International Civil Aviation Organisation (PICAO) was established to ensure safe and orderly growth of international civil aviation throughout the world.
- Distinguishing civil aircraft operations from State aircraft operations and a desire to safeguard their sovereignty were important enough to warrant the creation of Article 3.
- Article 3 excludes; State aircraft used in military, customs and police services from ICAO's regulations.
- ICAO came into being on 4 April 1947 after the 26th ratification was received.

Airspace management

- As airspace becomes more of a scarce and sought after resource, States needed to take a balanced approach to airspace management in a way that harmonises and meets the needs of international traffic flows and national security. This requires communication, collaboration and cooperation.
- In October 2009, ICAO hosted the Global Air Traffic Management Forum on Civil/Military Cooperation (ATMC), which was attended by more than four hundred high-ranking civil and military participants from sixty-seven Member States, six air navigation service providers and forty-six industry organisations.
- Realising that there was no existing international framework to bring civil and military authorities together, the Forum recommended that ICAO should play a pivotal role in improving the level of cooperation and coordination between civil and military authorities. Also, ICAO/ the framework should serve as the international facilitating platform.

the need for flexible use of airspace (FUA)

- Recognising that the growing civil air traffic and mission-oriented military air traffic would benefit greatly from a more FUA, the Forum recommended that civil and military experts should jointly develop advice and guidance on the best practices for civil/military cooperation.
- Circular 330 was prepared by civil and military experts and offers guidance on and examples of successful practices for civil and military cooperation.
- It acknowledges that successful cooperation requires collaboration that is based on communication, education, a shared relationship and trust.

Collaborative decision-marking

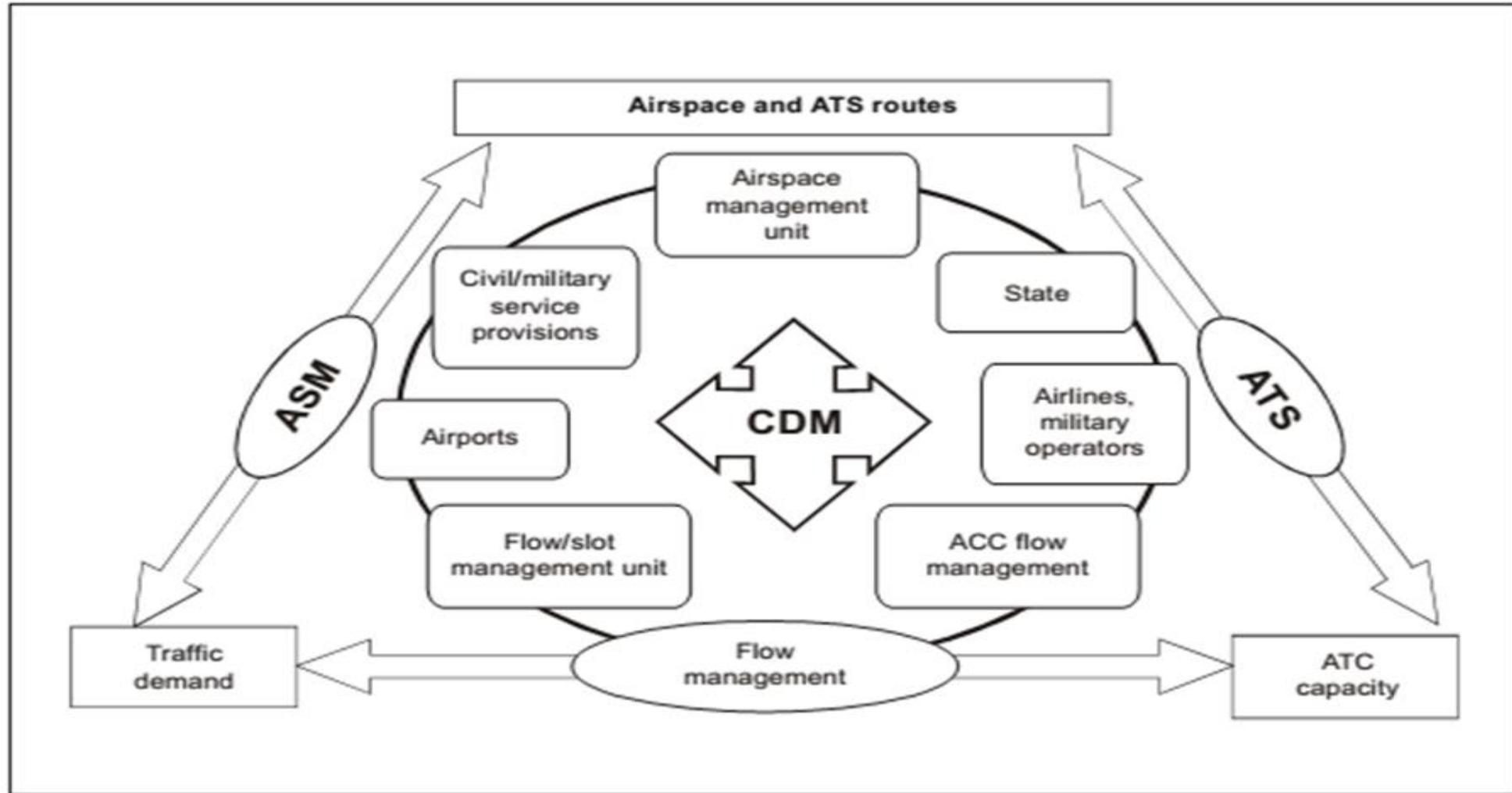


Figure 3-4. Collaborative decision-marking

The flexible use of airspace (FUA)

- The management of airspace should follow these guiding principles and strategies:
 - all available airspace should be managed flexibly;
 - airspace management processes should accommodate dynamic flight trajectories and provide optimum operational solutions;
 - when conditions require different types of traffic to be segregated by airspace organisation, the size, shape, and time regulation of that airspace should be set so as to minimise the impact on operations;
 - airspace use should be coordinated and monitored in order to accommodate the conflicting requirements of all users and to minimise any constraints on operations;
 - airspace reservations should be planned in advance with changes made dynamically whenever possible. The system also needs to accommodate short-notice unplanned requirements; and
 - complexity of operations may limit the degree of flexibility.

The flexible use of airspace (FUA) cont...

- The effective implementation of an ASM process demands commitment from all stakeholders involved.
- A first step towards an effective implementation of the FUA concept would be to allow civilian users temporary access to military restricted and reserved airspace for optimum use of the airspace.
- Another step would be to allow military users temporary access to civilian restricted and reserved 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.

Prerequisite observations for states to adopt an effective fua

- establishment of a national, high-level civil/military coordination body;
- development of a consistent, collaborative national airspace planning process taking into consideration the needs of all airspace users and national security, defence and law enforcement requirements;
- establishment of communication, negotiation and priority rules and procedures for civil/military coordination;
- establishment and publication of procedures for activities which require airspace reservation or restriction. Airspace reservations or restrictions should be applied only for limited periods of time and based on actual use;
- development of framework agreements between civil and military authorities to facilitate coordination;
- establishment of a system to periodically review airspace needs, organisation and management; and
- predictive and timely access to restricted or reserved airspace whenever possible in order to maximise benefits and flexibility for all users.

An fua concept shall embrace

- coordination between civil and military authorities should be carried out at the strategic, pre-tactical and tactical levels (see Figure 3-1) in order to increase safety and airspace capacity and to improve the efficiency of aircraft operations.
- consistency between ASM, air traffic flow management (ATFM) and ATS should be established and maintained at the three levels of ASM.
- airspace reservations should be of a temporary nature, applied only for limited periods of time and based on actual use of airspace.
- the FUA concept should, whenever possible, be applied across national borders and/or the boundaries of flight information regions (FIRs).

Coordination between civil and military authorities

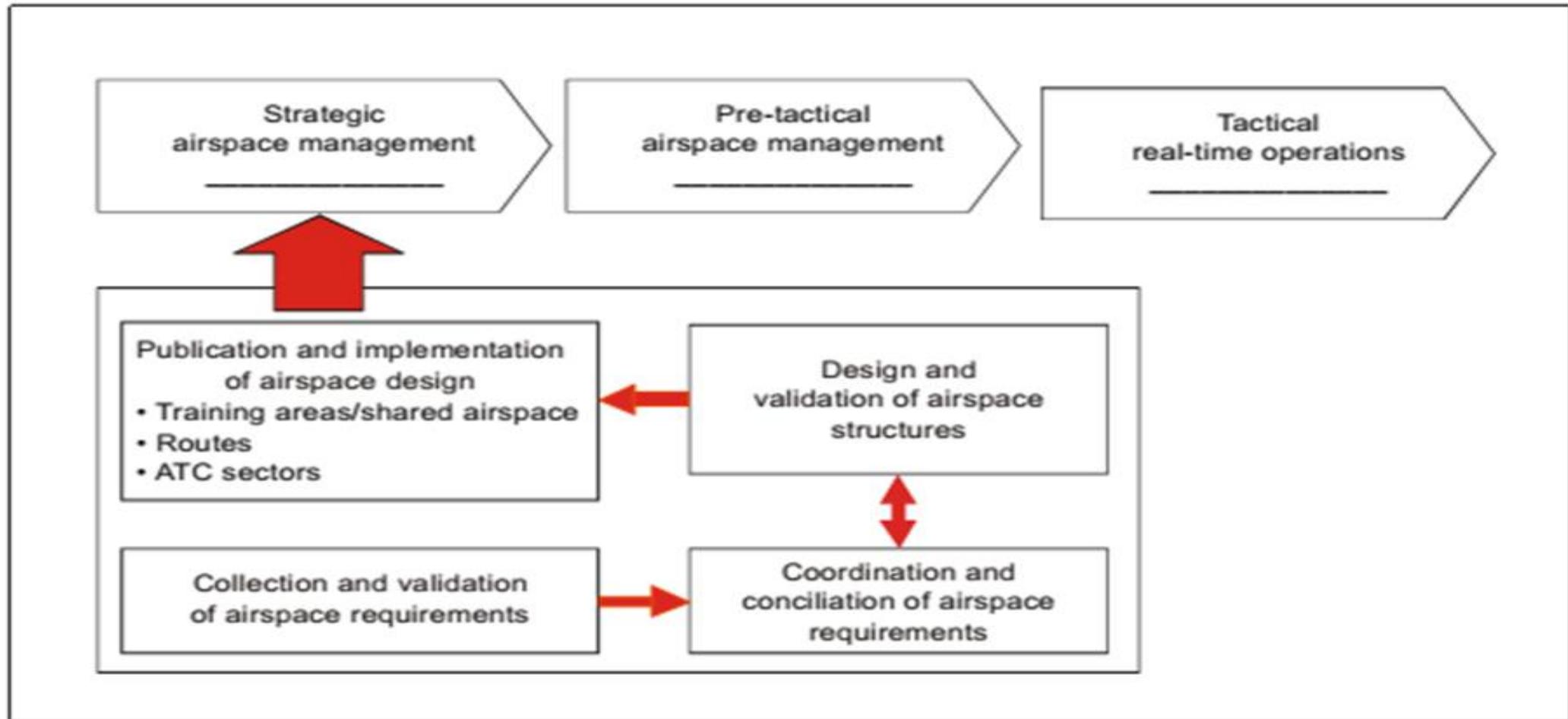


Figure 3-1. Coordination between civil and military authorities carried out at the strategic, pre-tactical and tactical levels

ATMC and North Atlantic treaty organisation (NATO)

- The ATMC ensures NATO's interface with CAA and is charged with the production, dissemination, monitoring and enforcement of Allied ATM standards, guidance and policy.
- Advises the North Atlantic Council (NAC) on all matters related to airspace use and ATM in support of Alliance objectives.
- Their main focus is to provide ATM support to NATO missions, operations and exercises. Working alongside national governments, international/regional bodies/organisations to rebuild some countries' respective aviation sectors.
- To ensure that Allied forces train and prepare adequately for their contribution to operations, the ATMC monitors aviation modernisation developments.

ATMC and NATO cont...

- Takes appropriate action to safeguard NATO's requirements regarding airspace utilisation and evaluates the impact of new ATM and communications, navigation and surveillance (CNS) developments on NATO's operational capability.
- Further, the ATMC helps NATO contribute to security in the civil/military aviation domain through a joint NATO/Eurocontrol ATM Security Coordinating Group.
- Representatives of the ICAO, Eurocontrol, European Commission Air transport, IATA and other aviation stakeholders regularly attend ATMC meetings and provide advice and support.

Civil/military integration in the uk

- The UK is one of the few countries around the world with a joint and integrated civil and military ATC service, with NATS and Ministry of Defence (MoD) controllers sitting side by side in the control centre at Swanwick, Hampshire.
- This close relationship allows greater cooperation and the more FUA.
- NATS handles the civilian en-route air traffic services in the UK, managing 2.2. Million aircraft that fly through the airspace every year, to and from UK airports and over-flying the country. These aircraft are managed in a network of routes and generally fly at similar speeds following a fixed route structure.
- On the military side, there are fewer aircraft to handle, but greater complexity, as there are many different types of aircraft conducting a range of different tasks across all classifications of airspace, sometime crossing busy, civilian air routes. Moreover, military controllers sometimes control both civilian aircraft (including scheduled airlines) and military aircraft of all nationalities.

Civil/military integration in the uk cont...

- Day to day, both civil and military controllers work together to ensure the safe passage of aircraft in UK skies.
- The FUA is another way in which both civil and military controllers collaborate. This is when the military no longer need to use a danger area and alert civil controllers so that they can re-route commercial aircraft and offer a 'shortcut' through this otherwise inaccessible airspace.
- Not all UK airfields are fully connected to the controlled airspace structure and military controllers will often assist with a service for aircraft en route to these airfields as they are well-practiced at operating in uncontrolled airspace. Conversely, civil controllers will also assist military aircraft on occasion when flying through controlled airspace.
- During incidents of national security both sides work closely together to minimise any impacts.

common needs

- Civ/Mil cooperation differs from country to country and within the same country dependent upon the control unit. This is not an issue in itself, however, as a result it is not feasible for IFATCA to state common needs for cooperation. This therefore delegates the responsibility to individual Countries, MA's and ANSP's to set guidelines according to their needs.
- The problems we face are the same everywhere; training, cultures, working procedures, working conditions and licensing. Steps could be taken to combat the potential issues and best practices decided dependant on MA's and ANSPs. Below highlights how different ways could impact working environments;
 - **Option 1:** No collaboration, coordination only. No FUA. No efficiency benefits. No effect on culture, training procedures.
 - **Option 2:** FUA. Many efficiency benefits, no affect on culture, little adaptation of procedures and low training demand.
 - **Option 3:** Co-location. Working in the same ops room but with separate procedures and supervisors. Moderate effect on need for culture integration, systems should be adapted (or moved), little affect on procedures (stay the same), some training needed when using one system etc....
 - **Option 4:** Integration. Complete integration of work, so large affect on culture, training, licensing, procedures etc. Maximum benefits and also maximum effort.

conclusion

- Good governance is needed for Civ/Mil controllers to integrate effectively. Their ways of operating can be vastly different and should be embraced and understood by increasing the depth of knowledge of each other's practices. The safe and efficient joint use of airspace by civil and military operations rests on understanding and accommodating the airspace requirements of all users on a fair and equitable basis, while respecting State sovereignty and national/international security, defence and law enforcement obligations.

recommendations

- It is recommended that this paper is accepted as information.

Sources

- IFATCA Technical & Professional Manual 2015
- IFATCA 13, WP No. 84, 'Study Civ/Mil Cooperation'
- ICAO Circular 330 Civil/Military Cooperation in Air Traffic Management



IFATCA

Any questions?