



WORKING PAPER

TWELFTH AIR NAVIGATION CONFERENCE

Montréal, 19 to 30 November 2012

Agenda Item 4: Optimum capacity and efficiency – through global collaborative ATM

4.2: Dynamic management of special use airspace

A TOTAL APPROACH TO CIVIL/MILITARY COOPERATION

(Presented by the North Atlantic Treaty Organisation)

EXECUTIVE SUMMARY

This paper presents that the value to the efficiency of the total aviation system is maximized if civil/military cooperation is harmonized at global levels.

The effectiveness of civil/military cooperation is multiplied if a civil/military approach is applied to cover as many items of common interests as possible to facilitate the implementation of mutually beneficial solutions, to enable exchange of know-how on aeronautical technologies, and to maximize the use of available resources. In particular, this approach should not be limited to the concept of just airspace utilization, but could also cover a variety of air traffic management and communication/navigation/surveillance initiatives such as performance-based navigation, automatic dependent surveillance-broadcast, controller pilot data link communication or to the challenges linked to the integration of remotely piloted aircraft.

Action: The Conference is invited to agree to on the recommendation in paragraph 5.

1. INTRODUCTION

1.1 Since its foundation in 1949, the North Atlantic Treaty Organisation (NATO) has been at the forefront of civil/military cooperation. In those early days one of the first NATO consultation bodies was the Conference for European Airspace Coordination or CEAC, which was established to promote cooperation between civil and military airspace users and operators. Now fifty-three years later, as one of the oldest bodies within NATO and now called the NATO Air Traffic Management Committee (ATMC), this is still the senior civil/military body responsible for air traffic management (ATM). The International Civil Aviation Organization (ICAO) was invited to join the CEAC from the very beginning and the cooperation between the two organizations has continued seamlessly to accommodate both civil and military requirements during times of routine aviation operations, and more critically, in times of crisis, thus ensuring better cooperation, dialogue and partnership.

1.2 NATO recognizes that airspace use and ATM require global coordination and that it is important to ensure that the aviation system block upgrades (ASBUs) concept, presented during the Global Air Navigation Industry Symposium and updated for the Twelfth Air Navigation Conference, as well as all current and emerging regional ATM modernization programmes, such as the Single European Sky ATM Research (SESAR) in Europe, Next Generation Air Transportation System (NextGen) in North America and collaborative action for renovation

of air traffic (CARATS) in Japan, offer compatible models and solutions for civil/military cooperation. This would also facilitate a seamless military/military interoperability which is a specific task of the NATO alliance to maintain.

2. BACKGROUND

2.1 In October 2009, ICAO¹ hosted the Global Air Traffic Management Forum on Civil/Military Cooperation which was attended by more than four hundred high-ranking civil and military participants from sixty-seven Member States, six air navigation service providers (ANSPs) and forty-six industry organizations. Realizing 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 and should serve as one of the primary international facilitating platforms. As an outcome, the Forum recommended that civil and military experts should jointly develop advice and guidance on the best practices for civil/military cooperation. ICAO Circular 330, *Civil/Military Cooperation in Air Traffic Management* was prepared by civil and military experts, including members from NATO, 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.

2.2 Recent global crises such as the 2004 Tsunami in Thailand, the 2010 earthquake in Haiti, and the 2011 Tsunami in Japan, have all demonstrated the substantial military contribution and highlighted the key roles played by civil/military cooperation, as well as coordination. In each case, civil/military cooperation was core around which the responses could be organized and humanitarian efforts to begin. It can be exasperating for response cells that often do not understand military activities to conduct or coordinate larger regional civilian efforts. It is therefore critical in developing contingencies for future crises to include the military and develop formal national military doctrine or structure for such activities. Established civil/military cooperation will result in information, knowledge and awareness across various domains, and lead to successful resolution of aviation and airspace management challenges in the event of future crises.

2.3 In March 2011, NATO answered the United Nations call to the international community to protect the Libyan people. Following United Nations Security Council Resolution 1973(2011), a coalition of NATO Allies and Partners began enforcing an arms embargo, maintaining a no-fly zone and protecting civilians and civilian populated areas from attack or the threat of attack under Operation UNIFIED PROTECTOR (OUP). The operation successfully concluded on 31 October 2011. During these seven months NATO developed a model for civil/military cooperation which enabled a safe and efficient conduct of Humanitarian Assistance flights and military air operations within the same airspace.

3. STRATEGIC DISCUSSION

3.1 ICAO, under the Chicago Convention, was created so that international civil aviation may be developed in a safe and orderly manner. ICAO further advised that, although the Chicago Convention governs international civil aviation and is not applicable to State aircraft (i.e. aircraft used in military, customs and police services), State aircraft as well as military CNS/ATM systems and services are an integral part of the international aviation community. Civil/military cooperation will contribute to the vision encapsulated in the preamble to the

¹ In partnership with the Civil Air Navigation Services Organisation (CANSO), European Organisation for the Safety of Air Navigation (EUROCONTROL), International Air Transport Association (IATA), North Atlantic Treaty Organisation (NATO) and supported by the Air Traffic Control Association, Inc. (ATCA) and Unmanned Vehicle Systems (UVS) International.

Chicago Convention, leading to the optimum use of the airspace and balancing State requirements for both civil and military aviation.

3.2 Within ASBU Block “zero” (2013) is the Improvement area “Optimum capacity and flexible flights” which foresees amongst other operational improvements, improved flexibility and efficiency in the airspace use. Although this initiative underlines the importance of a holistic approach towards the global efficiency of the aviation system, the efficiency of the entire global system has to be reached through the robust foundation of cooperation, coordination and engagement that underpins the definition of civil/military cooperation that would be expected during peacetime, crises, natural disasters as well as military contingencies.

3.3 There is still a commonly held view that there are two types of airspace “civil” and “military”. Of course, this is not true as airspace is a single entity shared by many different users. Military aviation and civil aviation are intrinsically different from each other in nature and functions. However, both operate in the same ATM environment and therefore use common airspace which needs to be stringently managed for safety and efficiency. NATO fully acknowledges the requirement of increased capacity to accommodate the ever increasing air transportation system. However, we should not think that efficiency just means optimized airspace utilization for one segment of users over the other. Efficiency is also increasing the ability of the overall aviation system to enable the safe and most effective accommodation of all flight profiles, from routine commercial operations to military missions. The concept of overall aviation system performance is as valid when conducting both civilian flight activities as those military activities associated with testing and training to meet defence and security requirements.

3.4 Traditionally, the focus of civil/military cooperation has been mainly centred on a more efficient airspace utilization. Today, with the rapid evolution of ATM and aeronautical technologies, there is not only scope, but also a requirement, for an expanded collaboration between civil and military actors in a much wider spectrum of areas, which could turn into productive synergies for quick win-win results and long-term integrated solutions.

3.5 Global aviation is experiencing unprecedented natural disasters, requiring civil/military cooperation. Many of these disasters have immediate ramifications internationally, and have evoked global responses. In many of these instances, the military is the first to respond, and the capabilities of the surrounding aviation system still needs to operate. The key is for both military and humanitarian actors to engage in a more meaningful and focused way. There needs to be a paradigm shift in doctrine and policy to enable the considered and appropriate use of foreign military aviation and associated logistics assets during the response phase of sudden-onset emergencies. Doctrine and policy must be clear and unambiguous and leave no room for misinterpretation, so that, in an emergency situation, there are clear and unequivocal standard operational procedures to follow.

3.6 The challenge of civil/military cooperation is exponentially increased in times of crisis when military operational activities have to share the same airspace with Humanitarian Assistance, civil en route traffic or other civilian air traffic. This was the case during the most recent UN mandated – Operation UNIFIED PROTECTOR, which will be seen as one of the most successful operations in NATO’s history. When the United Nations asked for assistance in protecting the Libyan people, NATO answered the call but the Alliance did not accomplish this mission on its own. The success of UNIFIED PROTECTOR showed that the Alliance can conduct a complex operation with effectiveness, flexibility and precision, alongside many partners and civilian agencies. The cooperation that NATO received from the civilian aviation authorities, including ICAO, EUROCONTROL, IATA, Malta Air Traffic Services, and other regional air navigation service providers, was outstanding. This assistance helped NATO ensure safety and efficient civil and military air traffic control throughout the seven month air campaign and was an example of modern day civil/military cooperation.

3.7 Another example and key enabler to civil/military cooperation is technical cooperation. This can include equipping civil and military aircraft with common or compatible systems or more strategically, developing a shared CNS and ATM infrastructure. In many cases, military systems meet or even exceed the “equivalent” commercial stand, but this often cannot be demonstrated exactly because of a different design and certification process. Resolving these issues will avoid some costs and overcome potential problems of equipping military aircraft with additional equipment.

3.8 It is probably safe to say that the most challenging of the new technologies to influence global aviation will be that of remotely piloted aircraft (RPA). It is also not unreasonable to suggest that the greatest experience with their operation rests with the military and that the military, at least in the short-term, will be the greatest exponents of their use. The unimpeded access to all airspace by RPAs has to be the end goal in any work associated with this platform but to do this, many of the perceived prejudices against the operation of RPA will need to be overcome. We must also guard against trying to achieve a “gold plated” solution straight away, whilst also appreciating that the wide range of RPA will require differing regulation to achieve full interoperability with manned aviation. The ICAO Circular 328 is an important step in this process and NATO has been grateful for the opportunity to sit as an observer to the ICAO Unmanned Aircraft System Study Group (UASSG).

3.9 The effectiveness of civil/military cooperation is multiplied if a complete civil/military approach is applied to cover as many items of common interests as possible to facilitate the implementation of mutually beneficial solutions, to enable exchange of know-how on aeronautical technologies, or to maximize the use of available resources.

4. CONCLUSIONS

4.1 In many parts of the world, civil/military cooperation has always been fostered. But in other parts, civil/military cooperation has not been totally embraced and actions need to be taken. The benefits achieved through effective civil/military cooperation at all levels should not be under-estimated. If developed correctly, it will continue to improve efficiency in the global aviation system.

4.2 Key to successful civil/military cooperation is the establishment of trust and transparency. The needs and requirements of both civil and military airspace users must be fully understood and recognized. It is in this context that common terminology and abbreviations should be developed and used by both users of the airspace in order to avoid confusion.

4.3 Effective civil/military cooperation and coordination is required not only to meet future civil and military air traffic requirements for increased safety, security, capacity, efficiency and environmental sustainability, but also to achieve interoperability, seamlessness and harmonization through sound policy, a structure framework, effective liaisons and management at all levels. ICAO Circular 330 represents solid steps to move civil/military cooperation from a series of sophisticated principles and theories applied by a limited number of inspired elites, to an indispensable set of concrete measures to enhance the safety, security and efficiency of the modern global air transportation system.

4.4 The ASBUs initiative links the overall performance of the aviation system to the holistic and synchronized management and the development of its key components, of which the positive exploitation of civil/military cooperation is clearly one. States must be encouraged to ensure that effective coordination is completed between civil and military authorities in order to contribute to harmonization of services to all.

5. **RECOMMENDATION**

5.1 The Conference is invited to:

- a) recognize the need for greater civil/military cooperation as a global application;
- b) recommend ICAO to include the civil/military dimension in relevant areas of its technical work programme, as described in 4.1 through 4.4 above;
- c) recommend and encourage ICAO to continue to work in close cooperation with major international civil/military aviation stakeholders to address the civil/military dimension; and
- d) recommend ICAO to assess the OUP model for integration of Humanitarian Assistance flights in crisis response scenarios, with a view to promotion of a globally recognized template.

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