Civil-Military Cooperation in Air Traffic Management (ATM)

Ensuring the Safe and Optimal Use of Shared Airspace

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Introduction

Importance of Civil-Military Cooperation:

- Ensures the safe, efficient, and optimal use of shared airspace.
- Supports both civil aviation growth and military operational needs.

ICAO's Role:

- International Civil Aviation Organization (ICAO) encourages states to consider civil aviation safety while regulating military airspace activities.
- ICAO Document 10088 provides comprehensive guidance on implementing effective cooperation.

Focus of the Presentation:

- Explore challenges, solutions, and best practices in civil-military airspace management.
- Highlight key concepts like Flexible Use of Airspace (FUA), institutional, operational, and technical constraints, and safety measures.

Royal Air Force C17 Globemaster transport aircraft are pictured in the early morning mist at RAF Brize Norton in Oxfordshire, UK, 7 Dec 2007. Source: Wikicommons
Author: Flt Lt Chris Knight

Importance of Civil-Military Cooperation in Airspace Management

- **Aviation's Economic Impact**: Civil aviation is a key driver of economic growth, requiring a stable and secure environment.
- **Military Needs**: Military aviation ensures national security and defense, often requiring flexible airspace access.
- **Cooperation Imperative**: Effective cooperation is essential to balance civil and military needs without compromising safety.
- **Reference**: ICAO’s Manual on Civil-Military Cooperation in ATM (Doc 10088) provides comprehensive guidance.

Role of ICAO and Regulatory Framework

- **Chicago Convention**: Article 3(d) urges states to ensure the safety of civil aviation when setting military regulations.
- **Resolution A40-4**: Reinforces the need for civil-military cooperation.
- **ICAO Doc 10088**: Introduced in 2021 to guide states in implementing or improving civil-military ATM cooperation.
- **Objective**: Promote the safe and optimal use of airspace for both civil and military purposes.

Shared Airspace and Safety Requirements

•**Single Continuum of Airspace**: Civil and military aviation operate in shared airspace, necessitating cooperation.
•**Safety Considerations**: Lack of coordination can lead to potential risks such as loss of separation or miscommunication.
•**Mutual Responsibilities**: Both sectors must prioritize mutual safety to ensure effective use of airspace.

Key Challenges in Civil-Military Cooperation

Institutional Constraints

- Military aviation often operates under different rules due to security priorities, creating challenges in integrating civil requirements.

Operational Constraints

- Military operations require flexible access to airspace, which can disrupt civil air traffic management.

Technical Constraints

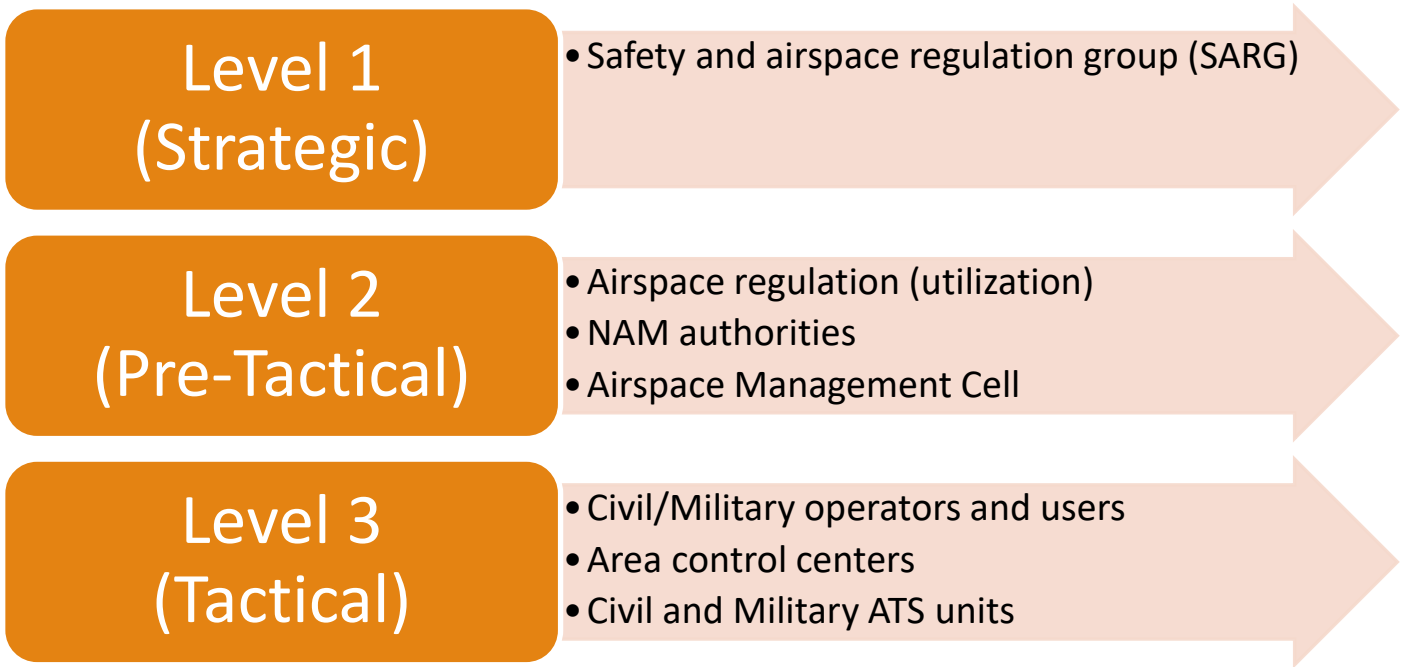
- Military aircraft may lack standardized communication or navigation systems, complicating coordination with civil systems.

Flexible Use of Airspace (FUA) and Airspace Management (ASM)

•**Flexible Use of Airspace (FUA)**: A key framework allowing dynamic allocation of airspace to both civil and military users.

Flexible Use of Airspace (FUA) and Airspace Management (ASM)

•**3-Level ASM Framework**: Involves strategic, pre-tactical, and tactical airspace management to ensure effective civil-military coordination.



Flexible Use of Airspace (FUA) and Airspace Management (ASM)

•**Asia/Pacific Focus**: FUA implementation is crucial for managing growing aviation traffic in the region, especially in high-demand areas.

Common Civil-Military Interaction Scenarios

- **Scenario 1: Military Aircraft Operating in TSA/TRA**: Temporary Segregated Areas (TSA) or Restricted Areas (TRA) require close coordination between civil and military authorities.
- **Scenario 2: Military Aircraft as General Air Traffic (GAT)**: Civil controllers manage military aircraft under ICAO standards.
- **Scenario 3: "Due Regard" Flights**: Military aircraft may not coordinate with civil ATC, increasing risks in international airspace.
- **Scenario 4: Air Policing and Refueling**: Require large reserved airspace and real-time coordination.

Safety Risks in Civil-Military Operations

•**Different Rules and Procedures**: Military aircraft often operate under different standards, creating potential safety risks.
•**Coordination Issues**: Lack of communication between civil and military controllers can lead to incidents.
•**International Waters**: Flights over international waters are less regulated, increasing safety concerns for civil aircraft.
•**Mitigation Actions**: Implementing joint procedures, better coordination, and integrating military controllers into civil ATC units are effective solutions.

Best Practices for Enhancing Civil-Military Cooperation

•**Strategic Actions**: States should establish joint rules, procedures, and working agreements between civil and military stakeholders.
•**Tactical Actions**: Real-time information sharing, proactive communication, and early coordination help mitigate risks.
•**Integrated Units**: Co-locating civil and military controllers can improve coordination and decision-making.
•**Airspace Management Cells (AMC)**: Dedicated entities for civil-military coordination at the pre-tactical and tactical levels can streamline operations.

Case Study: Asia/Pacific Region

•**Growth Forecast**: The Asia/Pacific region expects a dramatic increase in civil aviation traffic in the coming years.
•**Current Challenges**: The region lacks a mature civil-military cooperation framework, requiring significant efforts to implement FUA.
•**Ongoing Initiatives**: ICAO's APAC Seamless ANS Plan aims to build a three-level ASM system to manage civil-military operations effectively.

Conclusion and Call to Action

•**Summary**: Effective civil-military cooperation is essential for safe, secure, and efficient air traffic management.
•**Future Outlook**: States must continue to improve coordination, adopt ICAO guidance, and implement FUA frameworks.
•**Call to Action**: Urging states to collaborate closely with both civil and military stakeholders to ensure optimal airspace use.

THANK YOU !