



**M** Pilot: © Suchat tepruang/Shutterstock.com; Fighter Jet: © US Air Force, Staff Sgt. James Richardson; Space Background: © 1xpert – stock.adobe.com; Sky: © Katy – stock.adobe.com; Clouds (partially): © taira42 – stock.adobe.com; Networking Structure: © Think\_About\_Life – stock.adobe.com

# Strategic Horizons – Advancements in Air and Space for Deterrence and Defence

## *A Review of the JAPCC Conference 2023*

By Colonel Markus Müller, GE Air Force, JAPCC

By Lieutenant Colonel Florin Sandu, RO Air Force, JAPCC

### **Introduction**

Between 10 and 12 October 2023, the Joint Air Power Competence Centre (JAPCC) conducted its most prestigious annual event, the Air and Space Power Conference, to enhance deterrence and defence as one of NATO's core tasks. Experts from science,

politics, industry, and the military discussed avenues for further developing Air and Space Power and better aligning it with current and future scenarios. Tremendously supported by 11 industry sponsors and more than 300 attendees with various backgrounds, benefitted from distinguished keynote speakers such as Admiral Rob Bauer, Chairman of the



*Panel 3 discussed the future of air and space capabilities during the second day of the conference.*

NATO Military Committee, General Christopher G. Cavoli Supreme Allied Commander Europe (SACEUR), General James B. Hecker, Commander US Air Forces in Europe and Africa, Commander Allied Air Command and General James H. Dickinson, Commander US Space Command. The three-day event provided a platform to discuss perspectives on enhancing, sustaining, and using Joint Air and Space Power as one of the most effective and efficient means to deter the global competitors which pose direct and indirect threats to the security, peace, and stability of not only the Euro-Atlantic region but also the world at large, as we are witnessing today.

Several themes that could have a positive impact on the readiness, availability, and credibility of Air and Space Power permeated through discussions and must be considered noteworthy. This article will briefly summarize these discussions without attribution under the conference's Chatham House rules. The ongoing war

between Russia and Ukraine underscores the need for an immediate focus on today's and tomorrow's security challenges, emphasizing the crucial requirement for a collective effort throughout the alliance. It is imperative that we act together now to improve both the capability and capacity of our forces upon which our collective defence depends!

Through a comprehensive analysis of the conflict in Ukraine, valuable lessons have emerged that can serve as a foundation for developing innovative strategies in the military, societal, and economic domains. One crucial insight gained from studying this war is the significant role played by Air Power, or, more correctly, the distinct absence of decisive airpower by either belligerent. Despite Russia's haphazard pursuit of air superiority, they were unable to attain it, thanks to fatal flaws in their operational approach and the relentless efforts of the Ukrainians who displayed remarkable resilience and agility in

their defence. This observation holds immense significance for our community of interest.

Now, the question arises: How can NATO, its member nations, the civilian sector, and industry collectively enhance the level of force readiness? This query demands careful consideration and collaboration; During the panel discussions, it became evident that eight specific areas hold significant potential for strengthening NATO's capabilities in deterrence and defence.

## Strategic Vision and Planning

One critical issue that frequently arose in the debates was the pressing need for a change in thinking at the political level. It is crucial to fully comprehend the geo-strategic threat to our democratic values to allocate the necessary funds for the military for a credible defence, even if this decision may not be popular. Security should be carefully planned, and changes in priorities must be made as time is of the essence. Therefore, it is imperative to convince the public of the fundamental need to invest in defence by highlighting the real consequences that war can bring to all nations. Moreover, long-term strategic planning that aligns political objectives and military capabilities to meet plausible future warfare scenarios is essential.

Additionally, a profound shift in comprehending the strategic landscape is of utmost importance within the military sphere, as it serves as the key to achieving effective deterrence, as the perfect balance between capability and willingness. However, it is essential to recognize that aforementioned concepts alone may not always be sufficient, particularly when we closely examine recent conflicts (in Ukraine and Israel) that have been characterized by unexpected situations such as strategic surprise. As a result, it becomes imperative not only to transform the perspective of leadership but also to empower them to embrace uncertainty and think creatively, while making best use of recent advancements in technology. Additionally, it is crucial to foster a sense of purpose and understanding among fighters at all echelons of command and employment.

## Technological Superiority

Advancements in aircraft, missiles, sensors, satellites, cybersecurity, artificial intelligence, and other innovative technologies are cost intensive, but essential. However, we live in a society with diverse needs and limited budgets and must therefore strike the right balance between quality and quantity in our endeavours. In this regard, it is crucial for each country to conduct a thorough analysis to determine whether their defence needs can be met with available funds. It is crucial to acknowledge that deterrence is significantly more desirable than embarking on a costly war. Hence, it becomes imperative for nations to explore avenues for enhancing their military capabilities, either by procuring state-of-the-art resources or upgrading their existing arsenal, all while prioritizing interoperability.

Ukraine is a prime example of the clash between quality and quantity. On one side, we witness modern Western equipment and technology, representing the epitome of quality, though often in insufficient quantity. Conversely, we see low morale and ill-equipped units attempting to overwhelm the battlefield through sheer numbers. The perpetual battle between quality and quantity imparts a significant lesson: there will never be an abundance of either. Hence, it becomes imperative to invest in innovative and efficient technologies while also attracting new personnel. However, it is important to note that solely focusing on quality or quantity without the other would render it inconsequential in the long run.

Therefore, NATO must speed up the processes associated with research, development, and procurement of new state-of-the-art technologies, concomitantly using its technological advancements to improve conventional military capabilities. Here, too, there is reasoned debate over what premium should be paid for marginal advances in performance.

## Space Domain Awareness

A thorough understanding of the space domain, including enhanced situational awareness, surveillance, and protection of space assets, is increasingly important.



*AIR DEFENDER 23 exercise significantly promoted interoperability, cohesion, and solidarity.*

Addressing the multitude of air and space threats is an integral part of the concept of collective defence, and it is essential to have a common platform for sharing information and knowledge; military decision-makers increasingly rely on space-based assets to gain and communicate critical situational awareness. Accordingly, NATO is taking significant steps to establish space as a facilitator of air power and a catalyst for achieving strategic outcomes.

This vision entails the need for national or multinational programmes to collaborate effectively, ensuring resilience and redundancy in satellite constellations. Additionally, the private sector must play a crucial role in establishing robust space situational awareness. The military should leverage and integrate commercial assets, even though this association may expose commercial partners to non-physical, electromagnetic, or cyber threats, implicating

updates in deterrence policy in space. Striking a balance between commercial and military satellites will require a layered approach, including formulating integration and protection policies that assure our Allies and partners.

### **Improve Interoperability**

Increasing capability can be a challenging process, especially when it comes to acquiring expensive new capabilities like 5<sup>th</sup> generation aircraft. Costs may diminish the appetite for purchasing such assets. Therefore, it is crucial to consider interoperability as a potential solution for integrating old and new equipment to enhance every nation's capability pool.

Within NATO, large-scale multinational exercises have proven to be a unique opportunity to showcase

the potential offered by interoperability between different nations, services, and platforms. These exercises preserve NATO's integrity, its population, and its territory. AIR DEFENDER 23, the largest deployment exercise of air forces in NATO's history, emerged as a significant promoter of interoperability, cohesion, and solidarity. It has laid the foundation for the future pattern of NATO exercises in the air domain, demonstrating our ability to support and employ the readiness of Joint Air Power in the long term. Multinational exercises continue to be crucial for fostering an interoperable force. Moreover, they serve as an integral component of deterrence, effectively sending a clear signal: we stand united and are prepared to respond promptly whenever necessary.

## Training and Education

The operational readiness of armed forces, and thus the ability to deter, is based on the availability of materiel, and the necessary training and education of personnel. Education plays a pivotal role in this development, as tailored training scenarios enable the military to attain a higher individual and organizational performance necessary for integrating innovative technologies in warfare.

Hence, investments in defence education and training play a crucial role in enhancing the readiness and availability of military forces. Achieving practical cooperation within a multinational environment requires harmonizing educational processes across different countries. NATO military academies offer a wide range of courses for international students, bringing immense benefits in terms of knowledge sharing and best practices and fostering a collective understanding of warfare strategies. One outstanding example supporting these ideas is the Tactical Leadership Programme (TLP), which aims to elevate the effectiveness of Air Power by conducting exercises that range from mission planning and briefing to more complex tasks like flying large tactical composite air operations and developing conceptual and doctrinal initiatives.

## Robust Command and Control Structure

A sophisticated and resilient C2-Structure enables efficient coordination, decision-making, and execution of operations across all domains. The fruitful implementation of modern capabilities relies heavily on a robust and reliable C2 system specifically tailored to enhance the deterrent effect: There will be no successful military operation without proper command and control to ensure the unity of effort. Though NATO member countries possess different versions of C2 systems, some are considered outdated legacy systems. There must be a collective will and commitment to update and prioritize interoperability and integration between these systems. Despite this diversity, Joint Air Power remains a credible, capable, and readily deployable force, capable of comprehensively defending NATO from 360-degrees when required.

## Logistic Support

Effective Air Power requires seamless logistical support (ground and air) because a robust and efficient logistical infrastructure is the prerequisite to sustain operations by providing necessary supplies, maintenance, transportation, and support to deployed forces.

Debating the significance of logistics as a primary driver of success and a catalyst for enhancing capabilities is unnecessary. Throughout history, we have witnessed the decisive role logistics plays in determining the outcome of wars. The current conflict in Ukraine vividly highlights the stark contrast between the Ukrainian force that demonstrated exceptional skill in executing swift manoeuvres, deploying troops efficiently, integrating diverse equipment seamlessly, and sustaining their operations, while the aggressor struggles to equip, deploy, and support their military machinery. The logistics aspect of Russia's operational failures was no surprise to astute thinkers, underscoring the criticality of a modern, well-organized, and optimized logistical chain. However, within the NATO community, these observations have sparked a renewed discussion on how to further assist Ukraine while enhancing our ability to provide effective collective defence.

At the same time, the NATO Force Model (NFM) must significantly increase the total number of available and ready



*Air Commodore Paul Herber, Assistant Director JAPCC, provides his vision for the JAPCC and NATO air and space power.*

forces for planners. This monumental change will present challenges for nations, requiring them to invest in military infrastructure, recruit personnel, improve military mobility, procure new capabilities, and preposition equipment and associated stocks. Concepts like Agile Combat Employment and Resilient Basing are integral to the transformation necessary to accommodate the NFM structure. In order to progress, it is imperative to collaborate with industrial partners who can offer essential solutions to meet our expectations and further enhance interoperability.

### **Partnership and Collaboration**

Strong partnerships between military forces, government agencies, industry partners, and international allies are necessary. Collaboration promotes trust, information sharing, and technological development and increases production capacities. Therefore,

fostering improved communication between the military customers and the industry providers is crucial.

Collaboration and understanding between these two entities will ensure the military's needs are effectively met. By working together, we can navigate the challenges of the future and stay ahead of the ever-evolving technological landscape. To achieve this, it is imperative for the political level to allocate the necessary resources. Given the current geopolitical landscape and the limited time available to enhance existing capabilities, it is of utmost importance to shift towards collaboration and partnership.

### **Conclusion**

In summarizing the earlier discussed topics, we confidently assert and support fundamental truths regarding crucial aspects necessary for advancing Joint

Air Power as a top-tier deterrent in our ever-changing geopolitical landscape. These aspects include a shift in mindset across societal, political, and military domains, the seamless integration of innovative technologies into warfare, and enhanced collaboration within and between the industrial, political, and military sectors.

Referring to the quote from Billy Mitchell at the beginning, who emphasized the need to look into the future for further development of Airpower, it is crucial to conclude

that this approach can only be successful today if we work together with partners in a strong alliance like NATO.

For a comprehensive package on the Conference (Read Ahead, Proceedings and a Journal article), please visit our website <https://www.japcc.org>. We eagerly anticipate your presence in Essen, Germany between 8–10 October 2024 for the Joint Air & Space Power Conference, themed 'Challenges and Opportunities for Air and Space Power in an Evolving Security Environment'. ●

---

#### ABOUT THE AUTHORS

---



#### Lieutenant Colonel Florin Sandu

RO Air Force, JAPCC

Lieutenant Colonel Florin Sandu graduated from the Romanian Air Force Academy in 2001, earning a bachelor's degree in organizational management. He has held various positions throughout his career, including being a Tactical and Air Traffic Controller at the 71<sup>st</sup> Air Base Operation Centre in Câmpia Turzii, an Intercept Controller, and a Weapons Allocator for the Command and Reporting Centre. In Bucharest in 2017, he obtained his military college master's degree, graduating from the Romanian National Defence University. His further responsibilities included serving as the Head of Operations and Training Branch (A3), leading the Air Operations Coordination Centre within MNC-SE in Sibiu, and acting as the Chief of Staff for the 71<sup>st</sup> AFB, also on various operational deployments. Since August 2023, Lieutenant Colonel Sandu has served as a staff officer for Plans, Concepts, Development & Vision within the ACE Branch at JAPCC Kalkar, Germany. In this capacity, he contributes his expertise to strategic planning and developing innovative concepts for the organization.



#### Colonel Markus Müller

GE Air Force, JAPCC

Colonel Markus Müller started his military career in 1993 and was trained as Surface-Based Air Defence (SBAD) officer. He graduated from the University of the German Armed Forces in Munich and from the Air University, Maxwell AFB, attending the Air Command and Staff College. Colonel Müller has served in various staff assignments on tactical, operational and strategic level and in leadership positions from SBAD unit command up to SBAD battalion command (SAM Group 61). During his last assignment Colonel Müller worked at the Ministry of Defence in the Directorate General for Forces Policy in Berlin. His experience includes the NATO Operation 'Enduring Freedom' in Afghanistan being the Executive Officer of an Operational Mentor and Liaison Team (OMLT) and Operation 'Active Fence' in Türkiye, where the PATRIOT System was deployed for TBM defence. Currently, Colonel Müller is the Branch Head Assessment, Coordination and Engagement in the JAPCC. In this function, he also serves as the Conference Director for the annual Joint Air & Space Power Conference.