

Meeting the Needs of Future Warfare

The JAPCC's Experience as a Provider of an Opposing Forces (OPFOR) Element for NATO Exercises

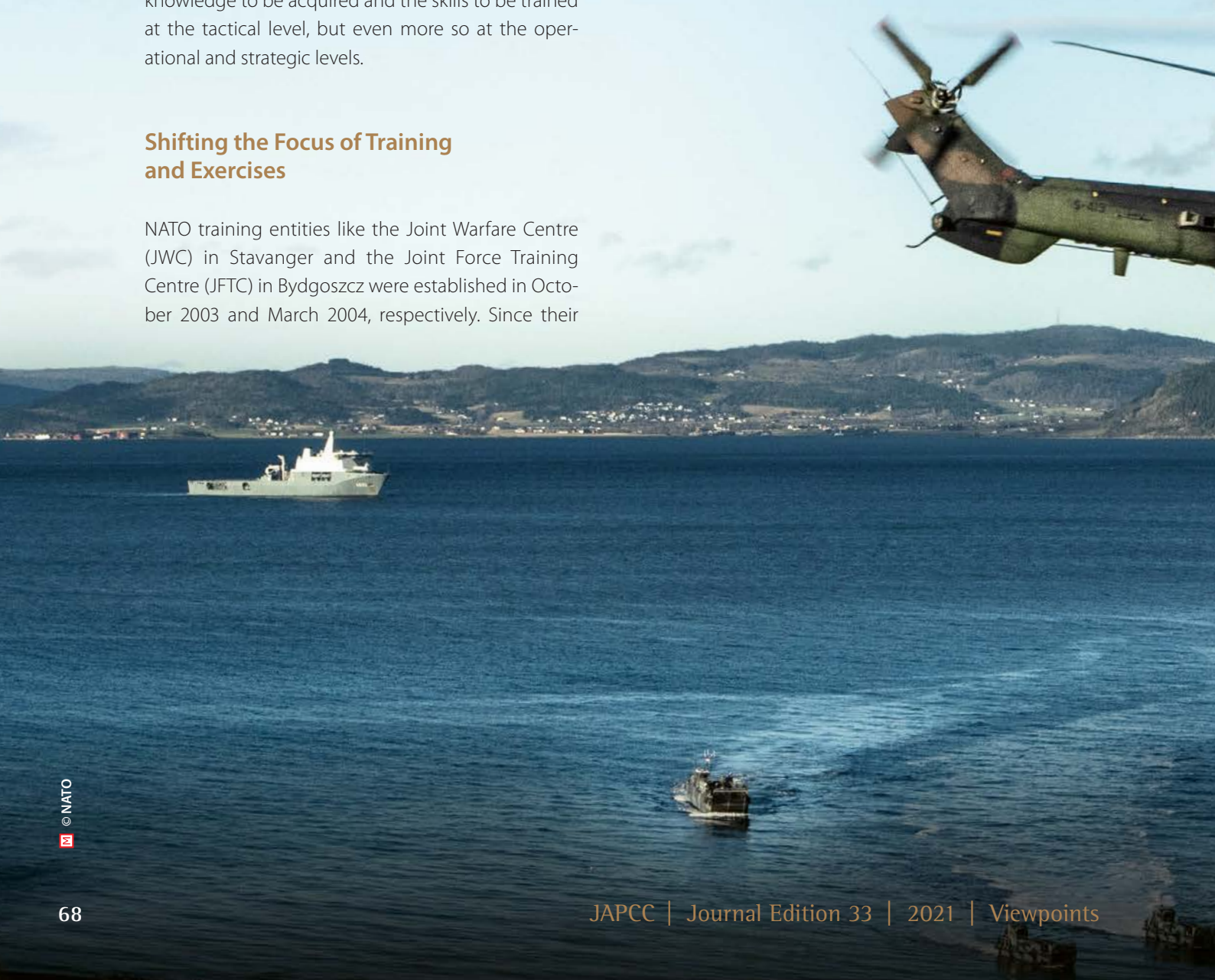
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In the first two decades following the end of the Cold War, NATO and its member states focused their training and exercises on the immediate needs of the new and diverse demands of crisis management operations. These demands were in many ways very different from what NATO had been preparing for in the 1970s and 1980s, and therefore required a considerable refocusing of education and training, i.e. the knowledge to be acquired and the skills to be trained at the tactical level, but even more so at the operational and strategic levels.

Shifting the Focus of Training and Exercises

NATO training entities like the Joint Warfare Centre (JWC) in Stavanger and the Joint Force Training Centre (JFTC) in Bydgoszcz were established in October 2003 and March 2004, respectively. Since their

inception, both have fulfilled exactly the needs of the time, focussing on Crisis Response Management and Counter-Insurgency Operations. The emphasis on training at the JWC was at the operational and strategic levels, while at the JFTC it was at the tactical level. The role of Air Power in these types of scenarios was quite limited, mostly focussing on the transport and the Intelligence, Surveillance and Reconnaissance



(ISR) roles in generally permissive environments, where adversaries did not possess credible air forces or counter-air capabilities.

The Russian invasion of the Crimean Peninsula in 2014, its support and involvement in Eastern Ukraine, as well as their involvement in the Syrian Conflict and in Libya, made Europe and North America aware that their primary focus on crisis management skills did not meet the need of allied forces and more generally of an Alliance whose core objective is to defend against any potential peer or near-peer aggressor. Developments in technology (e.g. artificial intelligence, high-speed and high-capacity data transfer) and re-armament efforts of Russia and other countries (including new long-range attack missiles, enhanced systems for Anti-Access/Area Denial [A2/AD], and hypervelocity weapons) provided a 'wake-up call' to

many NATO countries that the Alliance needed to re-invigorate its own vision of Collective Defence.

JAPCC's Support to Exercises

When JAPCC was established in 2005, its mission was to 'facilitate Joint Air Power Transformation', which included aspects ranging from 'concept development' to 'evaluation assistance and lessons learned activities'. The initial focus was to serve as a Think Tank for further development of Air and Space Power through drafting conceptual papers and providing contributions to NATO concepts and the development of Allied doctrine and doctrine-related documents. This work also included valuable contributions to training and exercises on a case-by-case basis. Starting in 2012, and underlined by a Letter of Agreement (LoA) with JWC,¹ the JAPCC formalized its support to exercises with an emphasis on the operational and strategic levels, i.e. the training of Joint HQs (Joint Force Command [JFC]-level) and components within Allied Command Operations. The impetus for this formal agreement was a lack of adequate specialist knowledge at the JWC, at the time, within the realm of Air and Space Power.





The LoA with JWC stipulated that the JAPCC would provide specialist knowledge and experience in Air and Space Power to assist in the delivery of training and exercise activities aimed at improving scenario development and providing trainer/observer teams, Exercise Control (EXCON) manning, and analysis at all stages. The common objective of both organizations was to provide, on a reliable basis, urgently needed expertise for agile and effective training of operational/strategic level audiences in order to meet the requirements of Collective Defence in future warfare environments. Not based on a formal agreement as with the JWC, but 'naturally' linked through common leadership,² the JAPCC soon provided its functional capabilities and subject matter expertise as well in support of Allied Air Command's (AIRCOM) annual exercise Ramstein Ambition (RAAM), thereby providing assistance to further development and refinement of Air Command and Control in NATO.

Realistic OPFOR Operating in Air, Space, and Cyberspace

The first exercise JAPCC supported under the LoA was Steadfast Jazz 13. An exercise conducted with a new scenario, named SKOLKAN, which focused on a limited NATO Article 5 scenario. Initially, when the JAPCC team arrived in Stavanger for the Main Events List/Main Injects List (MEL/MIL) scripting workshop, it was still unclear what role the team would play within EXCON. The desire was to keep JAPCC personnel together, as one team, to better highlight JAPCC as a supporting entity. Consequently, it was decided that JAPCC would take on the role of Red Air, or OPFOR Air. Unfortunately, JAPCC was not part of the SKOLKAN scenario development and was subsequently presented with pre-defined adversary air capabilities. The support delivered during this first exercise became crucial to the JWC/JAPCC relationship; because

it revealed that the scenario, as it had been developed so far, did not sufficiently reflect realistic and credible capabilities that were required to effectively train the audience. The JAPCC team also included a Space Subject Matter Expert (SME) in an attempt to introduce Space-related injects, but due to the late addition of JAPCC to the process the Training Audience (TA) was

with a multitude of other systems, such as coastal defence cruise missiles, an updated naval capability, and modern ISR capabilities. An overall more aggressive posture of OPFOR could finally be provided in support of the next major exercise, Trident Juncture 16 (TRJU16). The package aimed to replicate an A2/AD environment, which was duly challenging to the TA.



not adequately manned or prepared to deal with the Space aspects during that first exercise. It was therefore decided that the next iteration of the SKOLKAN scenario would have to include more up-to-date and realistic OPFOR Air capabilities. Despite the fact that the SKOLKAN scenario focused on limited operations, up to and including a Small Joint Operation (SJO) with a maximum of 300–400 air sorties per day, it provided a viable basis for further development.

Between 2013 and 2016, the JAPCC and the JWC further developed the scenario to a point where SKOLKAN's Air and Space capabilities were updated to reflect the most recent potential adversary capabilities, specifically in the field of Surface-Based Air Defence, modern aircraft types, (stand-off) weapons, jamming systems, Space-based systems, and anti-satellite systems. As a result, the scenario included multi-layered OPFOR Ground-Based Air Defence systems in combination

As a culmination of the SKOLKAN experience, having analysed the TA dilemmas and responses, JAPCC decided in 2016 to develop a briefing/training package to assist in accelerating the development of TAs skills. The briefing, entitled 'Component Integration Challenges in Combatting Advanced Layered Defence Systems (A2/AD)', not only analysed what A2/AD is and concepts on how to deal with it, but it also highlighted the ways various TAs had dealt with it in the past, including exercise adjudication from JWC and how an analysis of their results had been conducted. The initial briefings on current A2/AD structures and how exercises were replicating those systems were delivered at Supreme Headquarters Allied Powers Europe and JFC Brunssum. After being enthusiastically endorsed by the JWC Commander, word of what JAPCC was offering spread quickly. Since that initial briefing to NATO leaders, the JAPCC has presented the information at nearly 40 events, including Key Leader



Training events at both JFC Naples and Brunssum, air staffs in Romania, Italy, Germany, and to units in The Netherlands, Spain, and Belgium, to mention a few.

Training at Major Joint Operation Level

A potential conflict with a peer or near-peer competitor might evolve to a level quickly exceeding the scale of a SJO. To reflect this, starting in 2017, the OCCASUS scenario was developed to be used for the first time in the Trident Jupiter 18 exercise. This scenario aimed at enabling operations in a NATO Article 5 context at a Major Joint Operation (MJO) level. It included the latest developments, technologies, capabilities, and doctrine of potential adversaries and was designed to begin in the preliminary stages of a conflict, with an initial reaction of the NATO Response Force and a simultaneous build-up of a major force to counter the aggression. The development of the OCCASUS scenario provided the opportunity to add a host of new and different OPFOR capabilities from the Air, Space, and Cyberspace domains. As JAPCC had involved Space and Cyberspace SMEs in its exercise support since 2014, it was logical that these experts were included in the development phase of the scenario. As a result, significantly new and emerging capabilities were added, such as: OPFOR 5th generation fighters, air-launched hypersonic missiles, specialized jammers,

Low Earth Orbit satellites, Global Positioning System jammers, directed energy weapons and cyberspace warfare. Additionally, an offensive component of the A2/AD concept was introduced, namely deep-strikes into NATO territory, raising the realism of the exercises to a new level.

The aim of adding these new capabilities was to raise the level of complexity, challenge the TA to a level never before seen and increase NATO's level of ambition. The TA was severely challenged, and dilemmas were delivered up to and including the strategic level. Many of the new capabilities and tactics were unleashed from the first morning of the exercise, surprising and forcing the TA to adjust their plans right from the start. Throughout the subsequent days, reactions and decisions were sought up to the highest levels in the chains of command of every HQ involved.

Adaptations to Train the Air Component

Outside the JWC-led exercise arena, AIRCOM's main exercise, RAAM, continued to be developed with added layers of complexity and new Tactics, Techniques, and Procedures (TTPs). This was a gradual process that had to be managed carefully to keep the exercise at the Air operational level, primarily an Air Component's exercise. AIRCOM used the new, more

complex scenarios developed by JWC and further adapted them by offering additional opportunities to develop TTPs in a very dynamic air specific environment. This provided the perfect vehicle to expose the Air Component's TA to increasingly more complex dilemmas, including the Space and Cyberspace domains' aspects. One of the delivered events was a multifaceted cyber inject that culminated in a complex OPFOR Composite Air Operation (COMAO) which included false tracks, introduced via simulated malware, resulting in the COMAO appearing to be twice as large as it was in reality. Due to the innovative and imaginative challenges delivered to the TA, the RAAM19 exercise was considered by HQ AIRCOM to be one of the most successful and challenging exercises of the past ten years.

The Future of Exercise Support

What of the future for OPFOR (Air) support to exercises? It has become clear in recent years that the provision of a professional and specialized OPFOR is an essential part of delivering credible and effective training to NATO. It challenges the TA, using developing and imaginative concepts, which, in turn, forces innovation and creativity in training. This methodology will continue to be an effective tool, which can be further improved to assist in the development of new TTPs while staying in step with advances in technology or changes in adversary tactics. As the JAPCC OPFOR Air concept is becoming more successful and well known for delivering enhanced training, the requests for support from wider exercise audiences are constantly increasing. This in itself validates those initial efforts from the

humble beginnings eight years ago to the concept of a professional OPFOR, which is now an essential and effective part of present and future NATO training.

The future of warfare will likely see increasingly more complex operations across all domains; the term currently used to describe and summarize this scenario is Joint All-Domain Operations (JADO). It encompasses those actions taken by the joint forces of two or more nations, comprised of all available domains, integrated in planning and synchronized in execution, at a pace sufficient to effectively accomplish the mission.³ JADO will see an exponential increase in the traditional breadth and cross-domain harmony of decisions made, and actions taken, in a synchronized manner over an expansive and ever-changing battlespace. To enable the ability to consider all-domain effects and manoeuvre in and through all domains, it will require historic innovations in terms of training and education. The training and education plan will not only be innovative in and of itself, but the updating process of the curriculum and the flexibility of the training syllabus will require equally novel and evolving solutions. The future leadership, education and training plans will also need to incorporate these extremely challenging aspects of combined, joint all-domain warfare. The JAPCC remains committed to support the introduction of these aspects of modern warfare in exercise scenarios in the years to come. ●

1. Letter of Agreement between Joint Air Power Competence Centre and Joint Warfare Centre, 12 December 2012.
2. The Commander of Allied Air Command, headquartered at Ramstein Air Base, Germany, is also the Director of Joint Air Power Competence Centre at Kalkar, Germany.
3. NATO JADO: A Comprehensive Approach to Joint All-Domain Operations in a Combined Environment, JAPCC Leaflet, February 2021.



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manned, from June 2013 until April 2021, the Education, Training, Exercises & Lessons Learned Section Head position at the JAPCC. Prior to this posting, he was the Branch Head Offensive and Support Operations at the Combined Air Operations Centre Uedem, Germany. Other positions include Staff Officer Close Air Support in the Netherlands Maritime Force at Naval Base Den Helder. He also served for two years as Operation Planner at the J5 section of the Directorate of Operations in the Ministry of Defence in The Hague.

During 2004/05 he attended the Joint Advanced Staff Officers Course at the Senior Staff College in The Hague and graduated with an Executive Master degree in Security and Defence (EMSD).