

# WAR - GAMING



Lieutenant Colonel Travis Neddersen during the JETS 3.0 wargame.  
Photo by JWC PAO



With the JWC's **wargaming design capability** becoming fully operational in May 2022, NATO acquired a new learning tool to advance **cross-domain command**, one of the five **NATO Warfare Development Imperatives**. How is the demand for JWC wargaming? Find out in this interview with the JWC's Wargaming Branch Head, U.S. Army Lieutenant Colonel Travis Neddersen.



# "THE JOINT WARFARE CENTRE IS THE MAIN WARGAMING CENTRE IN ALLIED COMMAND TRANSFORMATION'S VISION FOR AUDACIOUS WARGAMING."

Interview by Inci Kucukaksoy, JWC Public Affairs Officer



**The Joint Warfare Centre (JWC) has accomplished a lot since the initiation of its wargame design capability in June 2020. Today the JWC is Headquarters Supreme Allied Commander Transformation's (HQ SACT) bespoke wargaming centre. What do you think about the growing recognition of wargaming in NATO?**

— The dedication and hard work of the JWC wargame design team over the past two years has certainly been an important factor, but the successful implementation of wargaming in NATO really rests upon the headquarters and commanders of Allied Command Transformation (ACT) and Allied Command Operations (ACO) who are willing to try something new and invest in the JWC's ability to deliver.

#### **Below**

ODIN STRIKE, an anti-access/area denial wargame developed by the JWC's Wargaming Branch, CAX operators and the Advisory Team. Photo by JWC PAO



Professional wargaming itself is not new, but it has come in waves over the past 200 years. Right now, we are seeing the rise of a new wave in wargaming interest. The establishment of wargaming branches at HQ SACT, JWC, Supreme Headquarters Allied Powers Europe (SHAPE), and other ACO headquarters is following on the heels of reinvigorated nationally-led wargaming. The U.S. military branches are driving forward to re-establish or grow their wargaming facilities and teach wargame design to a new generation of officers. Several European countries are pooling their wargaming resources to drive the field's development.

ACT recently conducted its annual Wargaming Initiative for NATO (WIN) conference, motivated by the combined efforts of Italy, France and Germany. We are also seeing professional wargaming emerge as an academic subject. At Georgetown University in the U.S. and King's College London in the UK, wargame design courses are bringing in students from outside of military circles, widening the diversity and range of viewpoints in wargaming while also helping to generate a pool of talented young designers for wargaming institutions.

The JWC began two years ago with a single wargame, WISE AEGIS, to demonstrate that its Wargaming Branch was functional. That grew into two wargames in 2022 when the JWC declared the branch fully operational. We started 2023 with the modest goal to create and deliver six wargames. With the demands coming in from ACO, however, we quickly surpassed that target and are now on track to deliver a total of 10 wargames in 2023. We are also quickly filling up our calendar for

2024 and even 2025! The demand is there and I think ACT and the JWC established this capability at the right time to be on the leading edge of this wave.

#### **Q2: What is the JWC's role in NATO wargaming?**

— The JWC is currently the main wargaming centre in ACT's vision for audacious wargaming. As such, our function is to link ACT and ACO by designing and delivering wargames that meet an ACO-sponsored headquarters' training needs while supporting Supreme Allied Commander Transformation's (SACT) Warfare Development Imperatives outlined in the NATO Warfighting Capstone Concept (NWCC). The close relationship between the JWC Wargaming Branch and ACT's Experimentation and Wargaming Branch helps to define our roles and responsibilities within the vision for audacious wargaming.

The team at HQ SACT focuses on those big strategic-level and innovation challenges that drive modernization and change within the Alliance. At the JWC, we set our sights at the operational level, helping to enhance understanding, develop solutions, and support operational planning at SHAPE, the joint force commands, NATO component commands and NATO Force Structure headquarters.

These headquarters are our main "customers" who drive our wargaming programme of work by requesting we develop wargames designed to meet an emerging need or challenge. The design process begins with these headquarters asking a fairly open-ended question: "What happens if...?", "Could we...?", "How do we...?".





Once they come to us with their questions, we consider that headquarters the wargame's "sponsor." The sponsor's role is to define the problem and set the initial parameters for the topic, including when and how much time is available for wargaming, whether the wargame needs to be integrated into other training such as a JWC-run exercise, the number of participants, the location, the available facilities. The most important thing for us is to understand what the sponsor wants to accomplish and set firm, defined objectives. We often help our sponsors take a broad concept and reduce it to one or two key objectives to focus the wargaming effort. For the sponsor, there must be an understanding that a single wargame cannot be all-encompassing and address every aspect of multiple challenges. In some cases, a sponsor might provide enough objectives to break a challenge into multiple wargames along related lines of effort.

The culmination of the sponsor engagement is a document we call the game specification or GAMESPEC. The GAMESPEC serves a similar purpose as the exercise specification (EXSPEC) does for a JWC computer-assisted exercise/command post exercise (CAX/CPX). It defines the wargame's objectives, scope, scale, participants and timeline, as well as any other parameters, constraints and information that will guide how we develop the game. The GAMESPEC is, in effect, a contract between

sponsor and JWC. Once the JWC Commander approves the GAMESPEC, the wargame becomes part of the JWC's programme of work.

### Q3: How do we design a wargame? Can you walk us through the process?

— The actual design process begins with research. We conduct two types of research for our wargames. The first is topical research. We want to gain as thorough an understanding of the sponsor's challenge as we can from the technical, tactical, and operational perspective. Fortunately, the JWC is packed with some of the most knowledgeable subject matter experts (SMEs) in their fields from across NATO. We often draw on this expertise to ensure we are on the right track. This line of research also ties in with SACT's Warfare Development Imperatives. The sponsor's objectives usually relate to one or more of the five imperatives: cognitive superiority, influence and power projection, layered resilience, integrated multi-domain defence, and cross-domain command.

Our second research area is within the wargaming world. Before designing anything ourselves, we want to see what has already been done on the subject, whether at national wargaming centres or from commercial sources. If we find a wargame covering that subject, we can often take that game's core concept and adapt it to fit the sponsor's needs. If no related

wargames exist, we look for mechanics within other games to help inspire our own wargame.

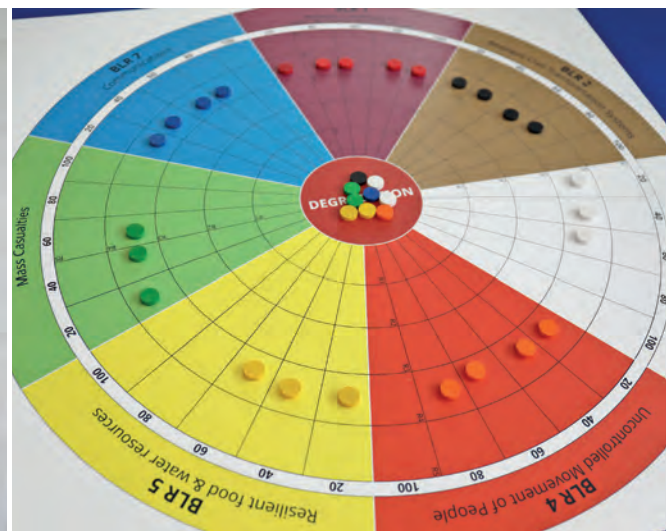
Then it is time to design our wargame. Wargames are about decision-making, not staff processes, and so our games seek to cut to the heart of the matter by ensuring that player decisions affect the course of the game. This is converse to a CPX where the training value is in getting a staff to analyse data to get to the "so what" for the commander. In wargaming we present the "so what" to the players up front, giving them only the key data they need to make their decisions. It also means immersing players in roles that are usually not their regular duty function. They may be put into the role of senior commanders or defence officials and make the decisions that drive operations.

These two aspects of wargaming often challenge people and get them out of their comfort zones. The game design must be straightforward and easy to understand while providing enough detail to address the sponsor's objectives. It is very easy to add complexity to a wargame, but any more than is necessary will confuse players, bog down the game and disrupt the players' immersion experience.

Once we feel that we have a viable concept for the wargame, we test the concept. These game tests or beta-tests are vital to ensure that we have a functional game and must be repeated

#### Below and right

JETS 3.0 wargame at Ulm, Germany; the JWC's first wargame, resilience-focused WISE AEGIS. Photos by JWC PAO



with different audiences. We usually start with a small game test within the Wargaming Branch, using our trained wargaming staff to iron out issues with the game's design. A second test is often done with the JWC staff and SMEs who contributed to the research. This test will show us how accurately we have addressed the challenge. A third game test introduces the game to an external audience. This may be the sponsor getting a preview of the game, or a third-party audience such as student officers at the NATO School Oberammergau. After each test, we refine the game's databases and mechanics to ensure that we have an engaging wargame that is fit for purpose.

Next, we move on to final production of the game materials, which marks the end of our design process. The time it takes to get this far varies. A typical design phase can take us from two to six months for a completely new wargame. If we are adapting an existing game, the time can be cut in half.

The last phase is the wargame delivery and execution. The size and scope of the wargame will determine how many people we send forward, but we always have at least two people delivering a wargame: one to administer the game to the training audience and the other both for support and as an observer to capture the sponsor's reception of the wargame and take down lessons learned to improve the game and our own facilitation techniques.

Big wargames such as STEADFAST FOXTROT will have many more facilitators to support the delivery to larger training audiences. We will also often call in NATO senior mentors (retired general officers) to act as

moderators for the wargame. Whereas facilitators govern the rules and mechanics of the game, the moderator is responsible for guiding the players through discussions and decisions as the substance of the wargame. Finally, the JWC and the training audience usually fill the position of observer/analyst jointly. We want to ensure that the lessons learned and outcomes of the game are captured from multiple perspectives.

Following the wargame, we continue to work with the training audience in sharing observations and collaborating on a final wargame report. No wargame can ever be repeated, as each iteration will bring different players and decisions, but after several iterations we can establish trends, patterns or detailed data to inform future plans and decision-making. Each wargame we create at the JWC is added to our "menu." This menu is designed to help make the process easier for the next potential sponsor by showcasing what we have already done for others.

## Q4: The JWC conducts both exercise-integrated and standalone wargames. Can you describe some of our key wargames so far?

— Our first wargame was WISE AEGIS in 2021. This was a wargame with an educational purpose, designed around civil resilience. Players gained familiarity with the seven resilience themes and explored situations that could erode or degrade national resilience. As an inaugural wargame, WISE AEGIS exceeded expectations and was afterwards adopted by the Civil-Military Cooperation Centre of Excellence for continued use.

In 2022, we created two wargames. The first was JETS 3.0, a deployment and sustainment wargame. In 2021, the United States European Command handed off ownership of the Joint European Time-Phased Force Flow Deployment and Sustainment (JETS) exercise to the Joint Support Enabling Command (JSEC) when the latter was declared fully operational. JETS had already been in use by the U.S. as a national wargame to simulate the large-scale reception, staging, onward movement, and integration (RSOI) of U.S. forces into theatre. The execution in 2022 was to be the third iteration of the exercise, but the transition to



JSEC had significant implications for the scope of the wargame to transition from a national to a multinational construct. For the first time we had U.S. and NATO logisticians working side by side to understand the challenges of the other. NATO logisticians were amazed by the personnel, material and infrastructure requirements of a complete U.S. heavy division crossing the Atlantic Ocean. U.S. personnel, meanwhile, gained a better appreciation for NATO's challenge of moving and sustaining a force composed of 30\* different supply chains operating at once.

Our second wargame of 2022 was a deterrence-focused key leader training (KLT) wargame to help "raise the deterrence and defence IQ" within NATO. The wargame was received well enough that we are planning to run it again as part of Exercise STEADFAST JUPITER 2023, NATO's largest CPX to date.

Our programme of work has turned 2023 into quite the busy year. The largest upcoming event is Exercise STEADFAST FOXTROT, which picks up where JETS 3.0 left off. We have overhauled and redesigned the exercise and wargame to address deployment and sustainment in a competitive and contested environment. The exercise will be executed as a "mega-game" in which three separate wargames are played simultaneously and linked through the scenario and player decisions. The game mechanics are now easier for players to grasp and objectives are more clearly defined. We are expecting STEADFAST FOXTROT to be a great event for bringing the NATO enablement and sustainment community together.

\* At the time of the JETS 3.0 wargame, NATO had 30 member countries.

### Below

Subject matter experts support the Wargaming Branch during the research phase for wargames. Photo by JWC PAO





"We are excited to see how far we can take this craft for NATO in the future."



**From left**  
JWC staff members during the legal interoperability wargame SWORD OF JUSTICE and during ODIN STRIKE, an anti-access/area denial wargame. Photos by JWC PAO

Possibly the most unique wargame we are developing in 2023 is called SWORD OF JUSTICE, which is about legal interoperability within the Alliance. In our research we found only one other wargame on the subject of operational military law, developed by the U.S. National Defense University, called "Baltic Gavel." We really liked the game's concept, but it was nationally focused and we wanted our own wargame to take it further into the multinational space. The JWC Legal Advisor and Wargaming Branch teamed up to call in a core team of legal experts from around NATO to help us identify the most important legal issues that could challenge an operational commander or fracture Alliance unity.

#### Q5: What is next for JWC wargaming?

— We have six projects lined up for 2024 and 2025, but there will likely be more. Wargaming is designed to provide a flexible and rapid training capability on demand. In 2023, we started our programme of work with just two wargames planned. That has grown to the 10 we have today. We can generate wargames far more quickly than almost any other form of training. This gives our sponsor headquarters and our design team the freedom to work with very short planning horizons and capitalize on opportunities as they arise. The wargame projects we have planned for the coming year

are really going to help broaden our range. We will explore cross-joint operations area (JOA) targeting and deep strike capabilities in the air domain. We are going to work with industry, governments, and military to wargame solutions for protecting critical undersea infrastructure. There are also plans to use wargaming to integrate non-NATO partners into some of the JWC's new major exercises, such as STEADFAST DAGGER. And of course we are going to build wargames that help educate and inform NATO on emerging multi-domain operations (MDO) and concepts.

We are also training and preparing internally to deliver large-scale planning and course-of-action wargames utilizing the U.S. Marine Corps' Operational Wargame System (OWS), one of the most detailed and sophisticated professional wargame systems available today. It covers all domains and can be played at the operational or tactical level with any scenario and over any space. We own two sets at the JWC and will be expanding our collection with each new update from the U.S. Marine Corps team at Quantico.

Our biggest wargame project remains STEADFAST FOXTROT (STFX). The JWC has been formally requested to fulfil the role of Officer Directing Exercise (ODE) for STFX as this new exercise series gains momentum. STEADFAST FOXTROT will continue to support the needs of the enablement and sustain-

ment headquarters in NATO, whose functions and missions cannot be represented within the confines of the other CAX/CPX events. We are exploring wargaming solutions that involve digital-hybrid simulation in order to add depth and data analytics to the exercise structure as well. We are proud of our branch's progress over the past two years and we are looking forward to seeing how far we can take this craft for NATO in the future. ✦

**Below**  
JWC wargaming presentation at the NATO Resilience Symposium in Riga, Latvia, April 26, 2023. Photo by JWC PAO

