



STEADFAST DUEL 2025

NATO's LARGEST-EVER COMMAND POST EXERCISE

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THE WEEK-LONG EXERCISE STEADFAST DUEL 2025 was NATO's largest and most demanding computer-assisted command post exercise (CAX/CPX) in recent history, testing NATO's multi-domain warfighting capabilities and readiness alongside data-centric innovations and AI-driven experimentation. Almost two years in the making, STEADFAST DUEL 2025 marked several firsts for the Alliance:

- It was the first Article 5 exercise involving all 32 Allies, including NATO's newest members, Sweden and Finland
- It was the first exercise to simultaneously train NATO's three joint force commands (Brunssum, Naples, and Norfolk)
- It was also the first STEADFAST exercise executed in a continuous 24-hour battle rhythm

Scheduled by Supreme Headquarters Allied Powers Europe (SHAPE) and directed by the Joint Warfare Centre (JWC), STEADFAST DUEL 2025 brought NATO's vision of integrated deterrence and defence to life, uniting all 32 member states in a realistic test of command, coordination, and transformation.

Addressing the Exercise Control (EXCON) staff on October 22, 2025, Major General Ruprecht von Butler, Commander JWC and the Officer Directing the Exercise, said: "Our increasingly complex security environment requires that we deliver more realistic and audacious exercises for the NATO Alliance. With the scale and scope managed by STEADFAST DUEL 2025, we will do exactly that."

Exercise STEADFAST DUEL 2025 involved 16 training audiences from NATO Command and Force Structure headquarters.

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SACEUR observing the exercise at Joint Force Command Brunssum (JFCBS), photo by JFCBS PAO; Major General Ruprecht von Butler (right) with the JWC's main planner for the exercise

It took place in multiple locations across Europe and the United States, bringing together over 7,000 military and civilian personnel from the Alliance.

The primary training audience of the exercise was Allied Joint Force Command Brunssum, led by General Ingo Gerhartz.

The exercise was based on the highly realistic 360-Degree Multi-Domain Setting (360° MDS), created and developed by the JWC. Though STEADFAST DUEL 2025 tested the full suite of NATO's Deterrence and Defence of the Euro-Atlantic Area (DDA) family of plans, it represented far more than a test of readiness; the exercise delivered tangible proof of how transformation, experimentation, and digital innovation now converged across the Alliance.

Complex Planning Architectures Under Real-world Conditions

Lieutenant Colonel Ralph, the JWC's main planner for the exercise, coordinated STEADFAST DETERRENCE 2025 across the various NATO headquarters as well as NATO centres of excellence, member states, NATO's top senior mentors, and civilian agencies. He underlined the significance of training under a round-the-clock battle rhythm.

"We have a new approach with the 24/7 battle rhythm, exercising more realistically and training as we fight. An event of this size needs the support of the entire JWC, and recent European history adds plenty of challenges and learning points to be exploited. The JWC has worked hard to deliver an exercise that meets emerging threats to NATO security."

Colonel Kevin Rafferty, the JWC's Deputy Chief of Staff Exercises, Training and Innovation and the Chief of Exercise Control, said: "Exercises at this level provide more than a mechanism to exercise and challenge the warfighting system. They are an opportunity for experimentation and development as the Alliance continues on its path of integrating

advanced command-and-control systems and technologies."

The Real Life Support (RLS) branch is responsible for vital aspects of the administration surrounding an exercise, such as accommodation and in-processing. Exercise STEADFAST DUEL 2025 was exceptional for the RLS team, too: "It's our first 24/7 exercise, and RLS is an integral part of almost every planning and execution step," said the JWC's "night" planner for the exercise. "It is special to see all the dedicated participants working hard during the night to accomplish the mission, and to know that we are a key part of enabling that."

Of course, a large and complex endeavour such as this exercise could not be carried out successfully without sophisticated communications and information systems (CIS). "Secure, interoperable, and resilient communication and information systems are powering the exercise," said JWC's Chief CIS for STEADFAST DUEL 2025. "JWC's IM/C4 (information management, command, control, communication and computers) Branch, in partnership with the NCI Agency, has ensured real-time command and control services are live across the Alliance – driving mission success through digital superiority."

The JWC's EXCON Senior Advisor, Major General Roger Lane (Ret.) referred to the JWC as a "very special learning environment." He said: "These exercises sharpen processes, deepen relationships and trust in each other, build critical judgement and improve risk management. Training audiences live with the consequences of their decisions, giving them a valuable, realistic, immersive learning experience, in which they learn to understand faster, decide faster and execute faster to overwhelm an adversary."





JWC's Programme Director for STEADFAST DUEL 2025 (STDU25) briefing the Exercise Control personnel



General Carsten Breuer, German Chief of Defence (left) and Major General Ruprecht von Butler, Commander JWC



JWC's STDU25 Content Managers with the Joint Force Command Brunssum lead planner



Representatives from the centres of excellence (COEs) supporting STEADFAST DUEL 2025: The Cooperative Cyber Defence COE; the Integrated Air and Missile Defence COE; the Joint Air Power Competence Centre; the Joint Chemical, Biological, Radiological and Nuclear Defence COE; the Modelling and Simulation COE and the Strategic Communications COE



JWC's lead planner with the German Chief of Defence



JWC's Real Life Support Branch Head managing the night shift



The Chief Exercise Control briefing staff



The STDU25 Norwegian Response Cell



Observing the exercise at JFC Brunssum on October 25, 2025, Supreme Allied Commander Europe (SACEUR), General Alexus G. Grynkewich, underlined that exercises fuel innovation and capability building across the Alliance. "NATO doesn't wait for crises to be ready – we train together so we're always ready," the SACEUR said. "Exercises like STEADFAST DUEL 2025 prove our strength is in our unity and our preparation."



The JWC Commander Major General Ruprecht von Butler (middle) and Deputy Commander and Chief of Staff Brigadier General Raymond L. Adams (left) with the distinguished visitors observing STDU25 on October 27, 2025

Experimentation

Throughout the execution phase, Allied Command Transformation (ACT) conducted targeted experimentation activities spanning doctrine, organization, training, materiel, leadership, personnel, facilities, and interoperability. Among these was the operation of a digital command-and-control system enhanced by large language models and artificial intelligence, accelerating NATO's progress towards a digitally enabled, multi-domain-operational Alliance.

These experiments allowed ACT to evaluate how emerging technologies can enhance decision-making speed, situational awareness, and cross-domain coordination. To support this effort, Headquarters Supreme Allied Commander Transformation (HQ SACT) deployed a team of observers under the Warfare Development in Exercises (WDiE) framework — an initiative that aims to better link warfare development with current operational processes during exercises to advance the implementation of multi-domain operations.

To further enhance the realism of NATO training, ACT also included observers from the NATO-Ukraine Joint Analysis, Training and Education Centre (JATEC). As NATO's first joint civil-military organization with Ukraine, JATEC plays a transformative role in strengthening collective security and fostering interoperability. Its participation in STEADFAST DUEL 2025 enabled NATO to draw immediate benefit from this unique and growing partnership.

Observing the exercise at the JWC, Major General Juan Jose Soto Rodriguez, HQ SACT's Deputy Chief of Staff for Multi-Domain Force Development, said: "JWC is a forward-thinking command with numerous internal initiatives, including ways to integrate warfare development in exercises,

validate multi-domain operations, and pursue increased realism through a more challenging adversary, free play and 24/7 operations. STEADFAST DUEL 2025 was a very realistic exercise based on operational plans, and with an impressive scope and width with regard to training audiences and the exercise staff."

"The JWC is evolving how we think, how we train, and how we deliver value to the NATO warfighter." – Major General Ruprecht von Butler

Exercise STEADFAST DUEL 2025 delivered tangible readiness for the Alliance. It validated not only NATO's ability to command and control large-scale multi-domain operations at the strategic and operational levels but also its growing capacity to translate strategic transformation into operational advantage.

As Supreme Allied Commander Transformation, Admiral Pierre Vandier, has often emphasized, transformation is not a theoretical process — it is lived through exercises such as STEADFAST DUEL 2025. The exercise reaffirmed that readiness and innovation are inseparable, and that NATO's collective strength lies in its ability to transform faster than the challenges it faces.

At the conclusion of the exercise, Major General Ruprecht von Butler said: "Exercise STEADFAST DUEL 2025 significantly contributed to NATO's warfare development and strengthened the Alliance's readiness as well as its deterrence and defence of the Euro-Atlantic area. Within Allied Command Transformation, the JWC is evolving how we think, how we train, and how we deliver value to the NATO warfighter."

Vice Admiral Doug Perry, Commander

Joint Force Command Norfolk, underlined that the exercise was a significant milestone in the JFC's journey on the path to mission readiness.

"I am proud of what we have achieved to this point, and I am excited to demonstrate our continued progress as JFC Norfolk grows ever closer to the nations within our area of responsibility — from Florida to Finnmark and from seabed to space."

The STEADFAST DUEL exercise series is linked to the U.S. Army Europe and Africa (USAREUR)-led exercise AVENGER TRIAD and informs the planning processes of Exercise STEADFAST WOLF 2026 — NATO's largest chemical, biological, radiological, and nuclear wargame exercise.

Observers

During STEADFAST DUEL 2025, a number of distinguished visitors were present at the JWC to observe the exercise first-hand and liaise with the JWC leadership: General Carsten Breuer, German Chief of Defence; Lieutenant General Gianluca Carai, Commander NATO Rapid Deployable Corps Italy; Major General Mindaugas Steponavičius, the Lithuanian Military Representative to NATO; Dr Bernhard Felmberg, the German Protestant Military Bishop; Rear Admiral Stephan Haisch, Commander Task Force Baltic; Brigadier General Matt Baker OBE, Head of Warfare Development at the UK Integrated Warfare Centre, Cyber and Specialist Operations Command; and Mr Eric Meyer, Charge d'Affaires ad interim at the U.S. Embassy in Oslo.

On October 27, 2025, the JWC also hosted an Observers Day involving military dignitaries across NATO, military representatives from the host nation Norway and local law enforcement officers. †