

15th ANNIVERSARY YEAR



THE MAGAZINE OF THE JOINT WARFARE CENTRE

# THE THREE SWORDS

## STAVANGER – NORWAY



**EXCLUSIVE!**  
**NATO AND STRATEGIC COMMUNICATIONS**

*The Story So Far*

**TRAINING AND SIMULATION**

**INSIDE**  
**THE POWER OF NON-ATTRIBUTION IN MODERN INFORMATION WARFARE**

**SUN TZU: THE ART OF WAR**  
**OPERATIONAL LEVEL LOGISTICS**

# WARFARE DEVELOPMENT

## FOR MAJOR JOINT OPERATIONS AND COLLECTIVE DEFENCE

**A2/AD**  
**COMPONENT INTEGRATION CHALLENGES**

Presented by Advanced Layered Defence Systems





**ON THE COVER**

The Joint Warfare Centre at sunrise in Jättå, Stavanger. Photo by Major Stephen Olsen, Norwegian Army. NATO's Joint Warfare Centre is celebrating its 15th anniversary throughout 2018 with key anniversary events, including a special Summer Family Day and the main anniversary ceremony on 23 October. **BELOW:** A photo collage illustrating NATO's Joint Warfare Development. Photos by NATO (AIRCOM and MARCOM).

**BACK COVER**

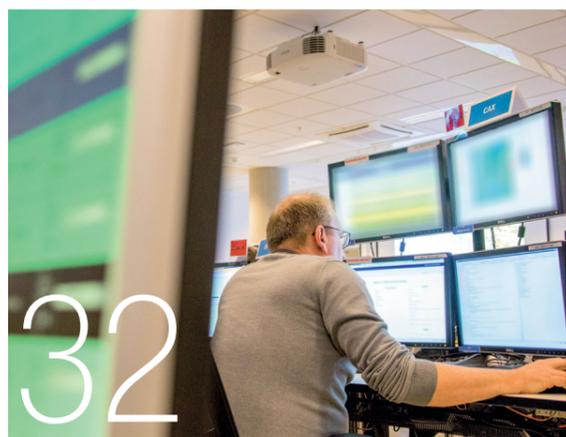
All photos by NATO, except for Norway and the United States by Jacob Østheim (Forsvaret) and Jordan Castelan (U.S. Air Force), respectively.

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March 2018  
Issue No. 33

"A robust exercise programme is a clear and visible demonstration of our ability to deliver the appropriate strategic effects in different environments, but also a demonstration of force. It assures NATO maintaining a high state of readiness across a full mission spectrum: it serves as the cornerstone of the Alliance's credible deterrence. This is precisely why Joint Warfare Centre's work is so important and contributes immensely to the core tasks of the Alliance."

**General Denis Mercier,  
Supreme Allied Commander Transformation (SACT)  
18 May 2017**



- 6** 2018 marks JWC's 15th anniversary year! The Centre is celebrating all-things-JWC throughout the year; its unique mix of "training and warfare", the core mission that brought everybody together, as well as its "One Team" ethos. By JWC PAO
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## EDITOR'S LETTER



## DEAR READER,

Welcome to the 33rd edition of The Three Swords Magazine and best hopes to all that 2018 has started off well for you. This is our first issue in the new year, which marks the JWC's 15th anniversary.

As we march into 2018, the two exercises that stand out are first, TRIDENT JAGUAR 2018 (TRJR18), and later, TRIDENT JUNCTURE 2018 (TRJE18), NATO's flagship exercise this year and its biggest endeavour to date, with Norway serving as Host Nation, in which Major General Andrzej Reudowicz, Commander JWC, is designated as the ODE (Officer Directing the Exercise) for the Command Post Exercise phase. TRJE18 aims to train and certify the NATO Response Force 19 (NRF19) led by Joint Force Command Naples (JFC Naples). The upcoming TRJR18, meanwhile, will train Multinational Joint Headquarters Ulm and NATO Rapid Deployment Corps Greece independently as Joint Task Force Headquarters, able to plan and conduct land-heavy non-Article 5 Small Joint Crisis Response Operations. We are heavily committed in both exercises and together with other planned training events in our Programme of Work, we will continue to be busy throughout the year.

As we look into 2018, we also know for certain that one of the most notable events of the year for us will be the 15th anniversary of the JWC. Although a relatively small organization, the JWC has an outstanding mission. The JWC's 15th anniversary is a unique opportunity to commemorate, celebrate and reflect upon our work, past and present, in all areas, but we will also look beyond 2018 and into the future.

So, what are we offering this time around? In this issue, as well as celebrating our 15 years, we aim to deliver a roundup of some of the most exciting themes and topics in NATO today. Training and warfare have been at the heart of the JWC's mission since its inception in 2003; through the JWC, NATO has taken its ambitions in Warfare Development even further. Just what, you may ask, is Warfare Development? The answer is within the pages of this magazine. We have included an eclectic mix of articles on Strategic Communications, logistics, Anti-Access and Area Denial; we look at biometrics and round off with more articles on defence and security, and even one on Sun Tzu, who is still there to inspire and teach us after so many centuries.

We are also happy to welcome Norwegian Air Force Brigadier General Kurt Pedersen as our new Special Advisor.

With our anniversary and TRIDENT Series of Exercises ahead, 2018 will be one of the most exciting years in the annals of the JWC. Thank you for your support, appreciation and unfailing interest in The Three Swords Magazine. And, congratulations to the JWC on 15 fabulous years!

**Lieutenant Colonel Stefan Kuehling**  
German Army  
Chief Public Affairs Officer  
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## THE THREE SWORDS MAGAZINE

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**THE THREE SWORDS** is the Joint Warfare Centre's authorised magazine published two times a year by the Public Affairs Office. It presents a compilation of articles, editorials, opinions, news and general information related to the JWC as well as a variety of key defence and security issues.

**The views and opinions expressed in this magazine are those of the authors alone and do not necessarily reflect the official policy of NATO.**

The Editor reserves the right to edit or shorten submissions prior to publication.  
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# FOREWORD

## Major General Andrzej Reudowicz

Polish Army  
Commander, Joint Warfare Centre

**E**XERCISE PLANNING for collective NATO training at the operational level is complex and ambitious, a 12- to 18-month schedule accomplished in four phases requiring an outstanding team effort internally and strong coordination with multiple organizations external to the JWC. However, focusing on the Execution Phase, or Phase III, some may miss how much we accomplish on our way to execution. So, what is the value of the Crisis Response Planning phase, or Phase II, of the overall exercise planning process?

I often say that Phase II plays a key role in the preparation of the NATO Command Structure and NATO Force Structure headquarters. Phase II is where the planning and product development that support the exercise Training Objectives occur, and the intricacies of the scenario, including the whole spectrum of political, military, economic, social, infrastructure and information (PMESII) ramifications are worked out. If Phase III is about implementation in terms of staff processes, Phase II is about taking a deep dive into key topics and strategic thinking; it is the realm of great military minds like Sun Tzu and von Clausewitz. It is Phase II that cements the JWC's role as NATO's pre-eminent warfare centre.

The prevalence of this strategic thinking ensures NATO's readiness to combat a future of growing threats and complexity. Phase II is the backbone of the exercise planning, and together with Phase I, the Academic Phase, provides a training and learning environment helping participants to hone a spectrum of skills required by Article 5 Collective Defence scenarios. And we have set a high bar for what to expect from this process. We recently concluded Phase II for TRIDENT JAGUAR 2018 (TRJR18) in multiple locations across Europe, which aims to train Multinational Joint Headquarters Ulm and NATO Rapid Deployment Corps Greece independently as Joint Task Force Headquarters. To conduct Phase II, I deployed to Mons, Ulm and Thessaloniki with the JWC's Training Teams, Observer Trainers and Senior Mentors to explore a variety of topics to help facilitate the efficient and accurate delivery of future phases of exercise development. Additionally, we have provided, here in Stavanger, a first-class venue and training for Operational Liaison and Reconnaissance Teams (OLRTs) from both headquarters.

The JWC's short-term outlook is fast-paced with more ongoing work on NATO's largest exercise to date, TRIDENT JUNCTURE 2018 (TRJE18). TRJE18 is the most notable event of 2018 and I am very proud to direct the Computer-Assisted Command Post Exercise portion of it, leveraging the Warfare Development opportunities that accompany such a large-scale exercise designed to train the NATO Response Force.



Elsewhere in this magazine, you will read about the JWC's Warfare Development enterprise and our adaptation to the size, scale and demands of an Article 5 campaign fought against a strong, determined and capable opponent. Warfare is our business; it is our mission, both by definition and by name. We are NATO's *only* joint warfare centre and the Joint Operational Level Warfare Transformation will naturally remain a focus of our work in 2018.

For those who are interested in NATO's long-term military transformation, I recommend a reading of the Strategic Foresight Analysis 2017 Report, which provides the combined Strategic Commanders' best military advice, describing 20 political, social, technological, economic and environmental trends, as well as

59 security implications for the Alliance. Trends and implications will be analysed in a follow-on report, the Framework for Future Alliance Operations, to be released in spring 2018. Both reports, whose development the JWC fully supports and contributes to, inform the NATO Defence Planning Process and are closely linked to capability development and concept development, as well as doctrine, training, exercises, leadership, and education.

We are very excited about our 15th anniversary this year, which we will commemorate throughout 2018, opening with the International Day on 28 January and culminating with our birthday on 23 October.

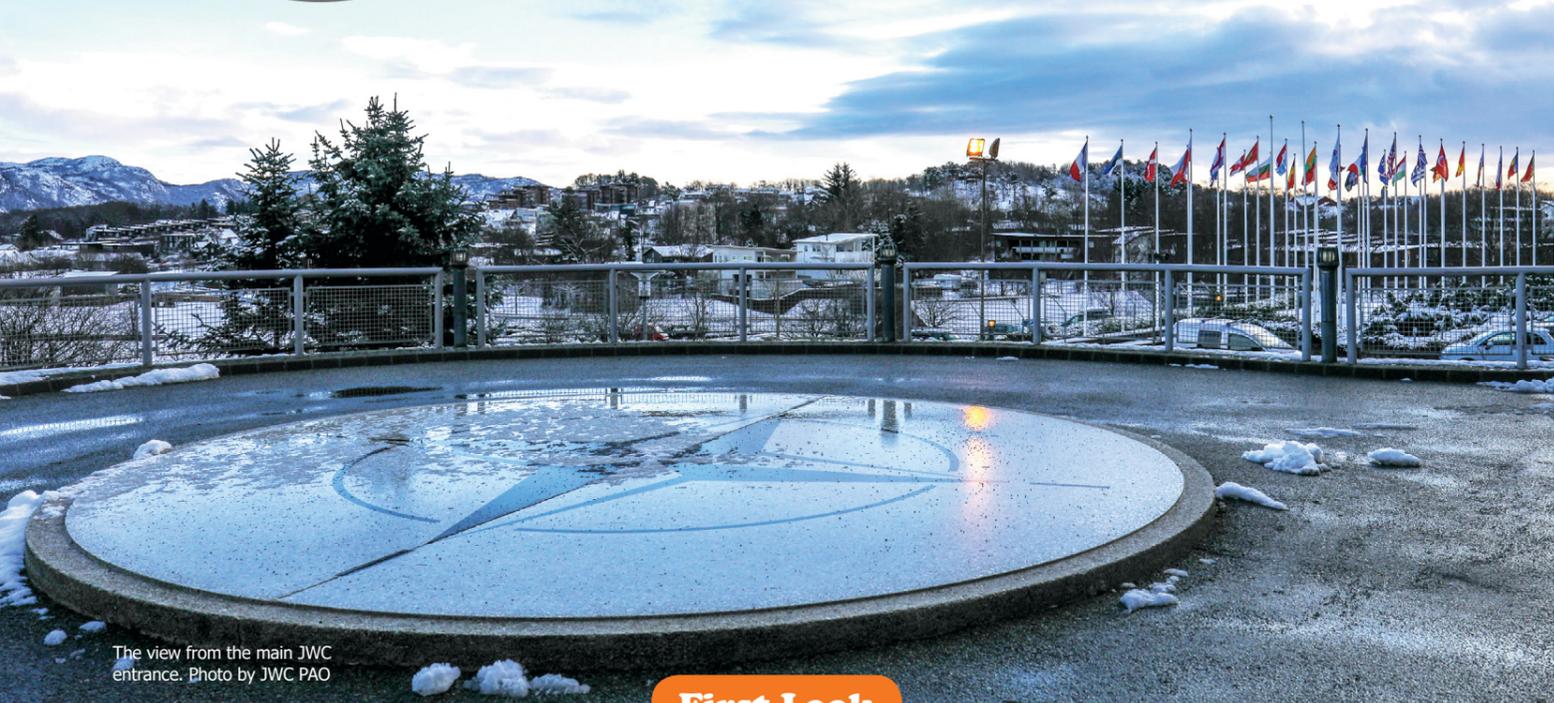
The JWC was established following the decision made at the 2002 Prague Summit to launch NATO's then most significant and ambitious restructuring process. It is a great privilege to be here, at the helm of the JWC, at this prestigious moment. As the premier training establishment of an Alliance of 29 Nations, we have much to celebrate and a great deal to be proud of, including our Host Nation Norway. She has extended her broad support to the JWC all these years, which is truly a testament of her commitment to NATO.

We may still be young at 15, but in essence, what we are talking about here, is 15 years of tremendous development and growth. The JWC has always been the centrepiece of Transformation, serving as the link between Allied Command Operations and ACT, implementing and operationalizing Transformation efforts as directed by ACT, for the benefit of NATO Command Structure and NATO Force Structure headquarters, the Alliance and Partners. Serving at the JWC here in Stavanger is the most unique and rewarding experience for all of us. It also helps, to say the least of it, that the JWC sits on a gorgeous site, on the outskirts of the city, providing every day the view of a Norwegian fjord and its majestic surroundings. Truly a great place to be and to work. ✦



2018 marks the JWC's 15th anniversary since it was activated on 23 October 2003 in Jåttå, Stavanger, Norway

by Inci Kucukaksoy, JWC PAO  
Anniversary logo design by Tudor Jelescu, JWC Media Section



The view from the main JWC entrance. Photo by JWC PAO

**First Look**

# HAPPY ANNIVERSARY, **JOINT WARFARE CENTRE!** NATO's Northernmost Organization

Since the moment the Joint Warfare Centre (JWC) was described as “the Jewel in the Crown of Allied Command Transformation”<sup>1</sup>, delivery of quality training, doctrinal and concept integration, experimentation in exercises as well as support to NATO's Lessons Learned process were inextricably intertwined. Back then, the Centre was manned at about 55 per cent of its authorized Peacetime Establishment. Lacking its own physical facilities in Jåttå, it headed to Ulsnes, a former hub for naval activity, to host its interim training facility, which was possible thanks to the support received from Host Nation Norway.



"You need a great conductor for a great orchestra and the Joint Warfare Centre is just that," General Jean-Paul Palomères, former SACT. Photo by JWC PAO

In 15 years, the JWC has expanded its bespoke facilities in Jåttå for training and education, and its name has become a byword for operational level training and Warfare Development with NATO commands. Today, in line with NATO's increased emphasis on training, the Centre can plan up to six different operational level exercises out into the future at any given time and deliver four per year, addressing the whole range of Alliance requirements, including the Command Post Exercise portion of a high-visibility exercise every three years.

**15 years at the forefront of training and innovation**

The JWC is NATO's footprint in the Northern region, which includes Scandinavia, the North Sea and the Baltic. Its motto “Training NATO. Advancing Doctrine. Integrating Concepts” reflects the Centre's mission and warfare capacity, which is unparalleled in NATO. Indeed, what makes the JWC particularly stand out are these two highly specialized tasks: Training and Warfare Development. As directed by Supreme Allied Commander Transformation (SACT), the JWC is responsible for providing NATO's training focal point for full-spectrum joint operational level warfare; with “warfare” focusing on exercise development and capability integration to adapt NATO's military capacity and, while doing so, fusing the two strands of warfare: the art of war and the science of war.<sup>2</sup> “Warfare in NATO can be summarised as the degree of operational readiness,” wrote Major Fabrice Beurois (Concept Development Branch) in a 2014 article, adding:

“The JWC has the capacity to influence the warfare mind-set in NATO.”

The Centre has been a constant provider of exercises and innovation for the past 15 years, delivering realistic and demanding joint operational level Command Post Exercises in support of NATO's Command and Force Structure Headquarters. In the words of the JWC's eighth and current Commander, Major General Andrzej Reudowicz, each of the Centre's activities, “be it contributing to innovation and concept development through experimentation to conducting ambitious and realistic training and exercises,” directly maps to the evolving Alliance objectives, because, as he underlines, “warfare is all the JWC's business”.

The Centre's two primary outputs are operational level exercises and support to NATO's Joint Warfare Development in accordance with SACEUR's requirements, which ensure NATO forces are well trained for any type of warfare, and ready to respond to current and emerging challenges.

It would be very remiss not to discuss two of the JWC's earliest training endeavours: The MRT (Mission Rehearsal Training) for ISAF in Afghanistan, which had been the Centre's highest training priority until its completion, and the IKLT (Iraqi Key Leader Training). Although these are no longer conducted, they both demonstrated the first-class training provided by the JWC over the years. Specifically, from 2004 to 2011, the JWC conducted

Afghanistan pre-deployment training events for nearly 7,000 personnel and, also from 2004 to 2011, provided biannual IKLT to a total of 256 Iraqi security officials at its interim training facility in Ulsnes.

Today, the warfare enterprise of the JWC is a catalyst for Transformation—the driving force that transforms NATO's combat system.<sup>3</sup> Given the reality of challenges and the requirement for trailblazing training solutions, the JWC remains committed to improving NATO's military capacity at the operational level and the efficiency of its deterrence and defence posture. In an interview made in 2014, former SACT, French General Jean-Paul Palomères, likened this role to that of a maestro, saying: “You need a great conductor for a great orchestra and the Joint Warfare Centre is just that. This is the Centre, the reciprocal of operational concept, operational knowledge and operational expertise.”

The JWC is the only NATO body to create and develop fictitious baseline training scenarios and settings used for collective training at the joint operational level, which involve real NATO countries and many fictional states differing in factors such as history, political structures, armies and geospatial data. Over the years, with *MADA*, *MADA VERDE*, *CERASIA*, *SOROTAN*, *SKOLKAN* and the brand new *OCCASUS* scenario-setting combinations, the JWC has raised its sights to the extent that it now prides itself on being regarded as the centre of excellence in NATO for sce-



The JWC Exercise Control (EXCON) team for NATO Response Force Exercise STEADFAST JUNO 2006, Ulsnes Interim Training Facility. Photo by JWC PAO



nario development and management, addressing the “360-degree” reality that the Alliance faces—a term coined by former Deputy Secretary General Alexander Vershbow, who was interviewed in this magazine in 2016—creating fresh thinking and favouring leading-edge innovation and development within disciplines.

A quick glance vividly illustrates the significance of the JWC’s flagship endeavour: one JWC scenario (*SOROTAN*) was used specifically for TRIDENT JUNCTURE 2015, NATO’s then largest exercise for non-Article 5, out-of-area threats. Another scenario (*SKOLKAN*), with its three different versions, focusing on the deployability concept and addressing the multilayered characteristics of the 21st century security environment, demonstrates NATO’s commitment to Collective Defence, operational preparedness and deterrence.

The shift from the humanitarian support mindset to the comprehensive operational environment of NATO Article 5 required the JWC to focus on new concepts (e.g. Anti-Access and Area Denial), and experimentation of an academic nature (e.g. Strategic Communications and Space Support to Operations). Since 2012, with the Article 5 focus, the need to gain a comprehensive understanding of the information environment, further utilization of computer simulation and “intelligent” Opposing Forces (OPFOR) also came to the forefront. In 2014, on assuming his duties as the then new Deputy Commander and Chief of Staff, Brigadier General Roger Watkins, proclaimed: “[The JWC] provides capabilities that no other [NATO] headquarters or centre can come close to, such as Computer-Assisted Exercises (CAX) and media simulation as well as scenario development. What has struck me most is a very robust Programme of Work and the quality at which it is accomplished. The staff here truly do provide world-class training and exercises, and their professionalism resonates across the command and beyond.”

To further improve NATO’s military capabilities, the JWC contributes to ACT-led Strategic Foresight Analysis and The Framework for Future Alliance Operations as well as the development of NATO’s Joint Operational Doctrine. The Centre has also produced a wide variety of joint operational guidelines and handbooks on modern warfare. As of 2018, the JWC has found itself even more drawn into Transformational activities, contributing to the



ABOVE: (from top) Major General Andrzej Reudowicz, Commander JWC. The Auditorium; media training at JWC (STEADFAST JOIST 2012, with Lieutenant General Phillippe Stoltz); White Cell Working Group, TRIDENT JAGUAR 2018. Photos by JWC PAO

momentum led by Multinational Capability Development Campaign, a NATO operational experimentation, which emphasises multinational interoperability and operational aspects of hybrid warfare, cyber security, medical support, logistics and Strategic Communications.

The maxim “Train Hard, Fight Easy” can be held responsible for the training and warfare output of the JWC. The Centre’s success is a result of huge amounts of hard work, preparation, strength and commitment.

In 2017, Major General Reudowicz announced his Vision as follows: “The JWC sustains and enhances its role as the premier provider and enabler in NATO for innovation and exercises at the joint operational level of warfare for the headquarters of the NATO Command and the NATO Force Structures, and when ordered, to any other headquarters of the Alliance. The JWC must continue to be at the heart of evolving NATO Joint Warfare Development, delivering Transformation through exercises to meet NATO’s future warfare requirements. This is, and will continue to be, delivered by the JWC whole force ‘One Team’ who are the only thing that makes us who we are.”

OVERALL, THE JWC has trained nearly 67,400<sup>4</sup> personnel from Allied and Partner Nations since 2004, when it conducted its very first exercise for NATO’s first Deployable Joint Task Force headquarters just three months after its activation. None of this would have been possible without the Centre’s “One Team”—including both past and present employees. Since August 2015, the JWC has aligned into a matrix organization to train NATO in the most effective way in order to meet the scale of Article 5 training requirements.

Today, as reflected in the Commander’s 2017 Guidance paper to staff at all levels, the exercise requirements to prepare the NATO Command Structure and the NATO Force Structure demand the JWC to continuously review how it plans and executes its exercises, be it at its site in Jättå or in deployed locations.

According to Major General Reudowicz, the JWC is “NATO’s corporate knowledge custodian for the planning and execution of complex multi-level joint exercises.” It must, therefore, be “ambitious, innovative and outward-looking in order to be able to adjust

quickly to the changing security environment and the requirements of NATO.”

For the JWC’s multiple Training Audiences *readiness* is at the forefront of everything they do as they strive to achieve their Training Objectives, be they Cyber or gender. In 2003, NATO took over command of ISAF (International Security Assistance Force) in Afghanistan, marking its first mission beyond the Euro-Atlantic area. It was also the year the JWC was born, evolving from Joint HQ North (2000-2003). Fifteen years on, the JWC has become known, albeit locally, as the “NATO organization in which everyone wants to stay on and extend their tenure!”<sup>5</sup>

All taken together, the JWC is one of NATO’s most unique organizations with an incredibly diverse portfolio of tasks and expertise. From training and in support of transformational efforts, through doctrine development and specialized publications based upon best practices to simulations and real life support, the JWC has been using every organizational function to great effect as NATO’s pre-eminent operational level training establishment. The Centre’s main ambition is invariably to improve interoperability, readiness and responsiveness among Allied and Partner Nations. As NATO moves farther forward into the 21st century, the combination of high-quality training and innovation, fusing with its warfare enterprise, has bestowed the JWC with one of the most imperative missions within the NATO Alliance. And, world-class training in Norway—where the cost of beer has always been an inexhaustible discussion topic amongst our Training Audiences—can indeed be low-cost, thanks to the great support received from our Host Nation.

We wish a very Happy Birthday to the Joint Warfare Centre who will turn 15 this year, on 23 October. ✦

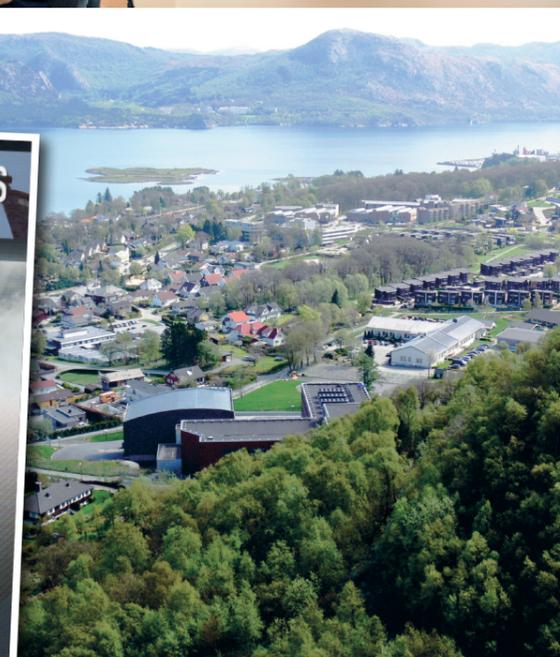
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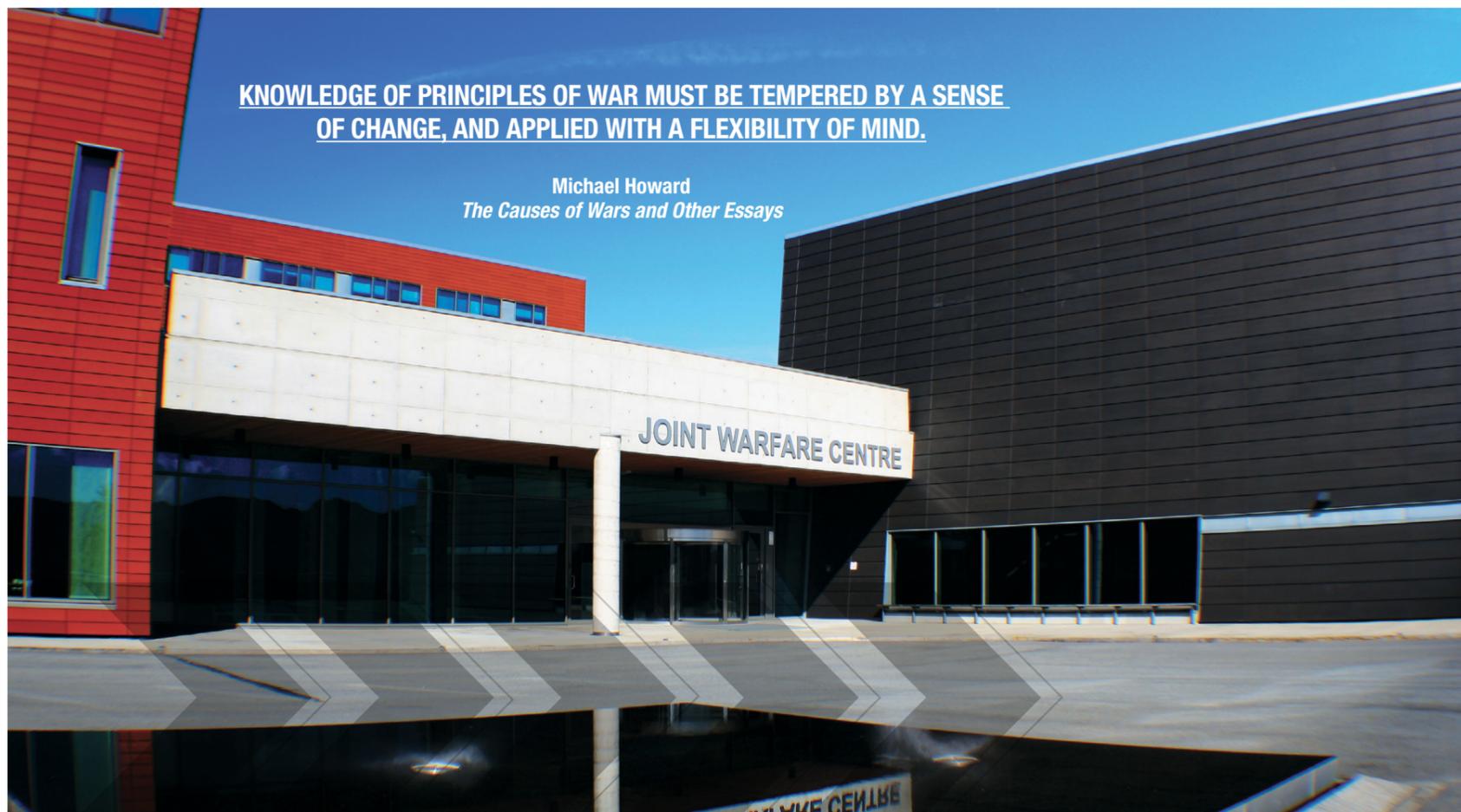
- 1 U.S. Navy Admiral Edmund P. Giambastiani, Jr, the then Supreme Allied Commander Transformation (SACT), at the JWC Activation Ceremony in the afternoon of 23 October 2003.
- 2 Major Fabrice Beurois, “What is Warfare?”, The Three Swords Magazine, May 2014, Issue No. 26.
- 3 SACT Vision, www.act.nato.int
- 4 The number involves the execution phase (Phase III).
- 5 A quote by former JWC Special Advisor to the Commander, Commodore Hans Helseth.



Training NATO.  
Advancing Doctrine.  
Integrating Concepts.

CLOCKWISE: A bird’s eye view of JWC in Jättå; Lieutenant General Thorstein Skiaker, the first Commander of the JWC and the keynote speaker during the Centre’s 10th anniversary in 2013; participants of JWC’s “One Team” culture programme, September 2017; the view looking down over Mount Jättå; The Three Swords Magazine cover from 2011, introducing the SKOLKAN setting and scenario. Photos by JWC PAO





KNOWLEDGE OF PRINCIPLES OF WAR MUST BE TEMPERED BY A SENSE OF CHANGE, AND APPLIED WITH A FLEXIBILITY OF MIND.

Michael Howard  
*The Causes of Wars and Other Essays*

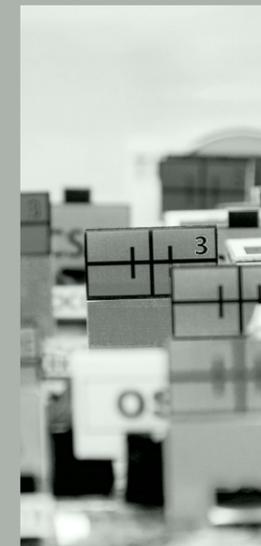
ON THE COVER

# WARFARE DEVELOPMENT

## FOR MAJOR JOINT OPERATIONS AND COLLECTIVE DEFENCE

by COLONEL NEIL WRIGHT

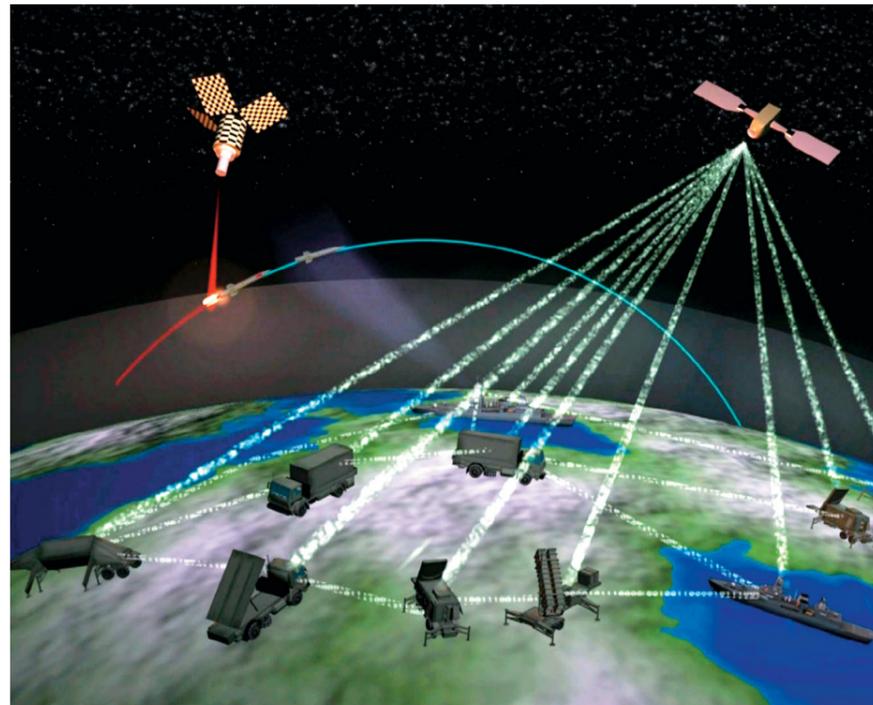
British Army  
Deputy Chief of Staff (DCOS) Exercises, Training and  
Innovation Directorate, Joint Warfare Centre



The Joint Warfare Centre is far from simply being a training centre and the importance of our role in **Warfare Development** is, arguably, greater than ever as we refocus NATO's agenda for **experimentation, interoperability and doctrine development** against **Collective Defence** and **Article 5** scenarios.



ABOVE: A modified screenshot from JAVELIN (JTLS) showing red and blue forces. A Computer-Assisted Exercise (CAX) is a type of synthetic exercise where forces are generated, moved and managed in a simulated joint environment. CAX enables NATO Transformation to challenge and enhance capabilities, increase interoperability, save resources and reduce risk. RIGHT: NATO Space-based early warning capability. The early detection is communicated to Ballistic Missile Defence Command Centres within a minute or two of the missile launch. Integration of Space in exercises started in 2016 with TRIDENT JUNCTURE. Graphics by NATO



WE LIVE IN interesting times, perhaps the most consequential for European security since the end of the Cold War. As NATO puts its weight behind assurance, deterrence and Collective Defence, so our work here at the Joint Warfare Centre (JWC) has adjusted from Crisis Management and Cooperative Security back to the challenges of facing a large and capable opponent. We find ourselves addressing once familiar aspects of major combat operations, like how to integrate joint actions to overcome layered defences,<sup>1</sup> anti-submarine warfare, operating in contested airspace, massing logistics, speed of assembly, freedom of movement, deception, concealment and emissions control, to name but a few old faithfuls that deserve attention. Newer considerations have surfaced, such as the extent to which military commanders should wage “information war” to counter an adversary’s narrative, thrusting leaders into far

more public roles, not to mention highlighting contentious normative, ethical and legal considerations. So, these are indeed interesting times calling for broad-minded approaches to Warfare Development. And this is what staff in the JWC are attending to.

Whilst the JWC delivers higher command and staff collective training for 3- and 4-star NATO headquarters,<sup>2</sup> it also leverages a huge dividend in research and development. Although our training exercises are the most conspicuous aspect of what we do, it is our role in joint and combined Warfare Development that offers an enduring dividend to the Alliance. As the diagram on the next page demonstrates, training and Warfare Development are inextricably linked. So, the JWC is far from simply being a training centre and the importance of our role in Warfare Development is, arguably, greater than ever as we refocus NATO’s agenda for experimentation, interoperability and doctrine development against Collective Defence and Article 5 scenarios.

Having completed TRIDENT JAVELIN

2017 (hereafter abbreviated to JAVELIN) in the autumn of last year, a vast Major Joint Operation<sup>3</sup> Command Post Exercise, involving, for the first time in more than two decades, all levels of the NATO Command Structure and a considerable proportion of the NATO Force Structure, we have a very rich seam to mine. This article draws upon that recent experience and our continuous adaptation since the 2014 Wales Summit, which identified the need to restore the Alliance’s ability to warfight at scale against a near-peer adversary.

**Lessons learned/identified for warfare development**

Identifying the right areas for Warfare Development in the contemporary environment requires judgement. As the historian Michael Howard notes, differences brought by social and technological changes can be immense, even in the short term, and an un-intelligent study can easily lead to inappropriate conclusions deduced from oversimplified

**Whilst the JWC delivers higher command and staff collective training for 3- and 4-star NATO headquarters, it also leverages a huge dividend in research and development.**

generalisations. So, “knowledge of principles of war must be tempered by a sense of change and applied with a flexibility of mind.”<sup>4</sup> Carl von Clausewitz described this evolution in warfare as “chameleon-like in character, because it changes its colour in some degree in each particular case.” To that end, we must accept that change is constant and a critical factor to any analysis of the joint operational

level and be circumspect in drawing the right lessons into our development work.<sup>5</sup> In such dynamic times it is important, therefore, to build from a solid foundation. That foundation is NATO Doctrine and, as Commander JWC, Major General Andrzej Reudowicz puts it, our role is to act as a “guardian of NATO Doctrine and standards”. For it is our doctrine that codifies what is known.

**NATO Military Doctrine:**  
Fundamental principles by which the military forces guide their actions in support of objectives. It is authoritative, but requires judgement in application.

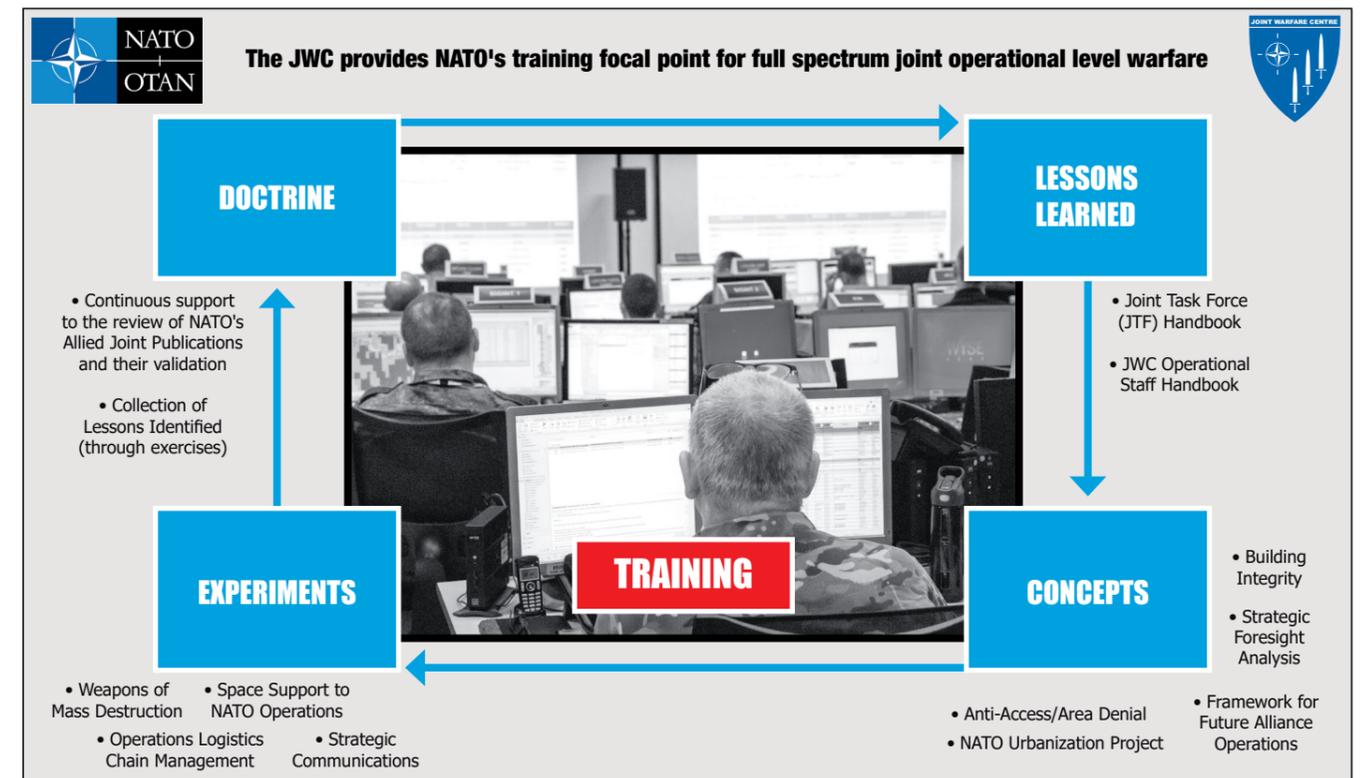
Indeed, as our own Doctrine Branch and Training Teams know, doctrine development never stands still. By stress testing NATO’s body of functional and thematic doctrine in our exercises, the JWC can offer significant insights to the drafting and updating of Alliance doctrine; one recent example being our authorship of the Battlespace Management

Section of Allied Joint Doctrine for Conduct of Operations.<sup>6</sup> Another example would be lessons from JAVELIN, highlighting the requirement for multiple Theatre Logistic Bases due to challenging geography and the size of the Joint Operational Area (JOA).<sup>7</sup> It is here that observations from training have been drawn into revised doctrine for operational planning and execution; lessons identified, codified through doctrine to become lessons learned.

And it is right to be doing this work at pace, for change is not unique to NATO; think about the quantum development in doctrine and capabilities in the Russian military in recent years under their dynamic chief, General Valery Gerasimov.<sup>8</sup> Our efforts will be marked and matched.

The JWC staff have enjoyed the privilege of being part of Warfare Development played out through JAVELIN. We have learned much from observing and contributing to the concepts and doctrine, not to mention witnessing three levels of command take it from drills and process to an expression of operational art. Here, we have seen *Generalship* in action. Com-

BELOW: The unique training infrastructure at the Joint Warfare Centre that connects “Training” to “Warfare Development”.





General Salvatore Farina, Commander JFC Brunssum and the simulated Article 5 mission "Operation Unified Resolve". During JAVELIN, the Command and Control elements of the NATO Response Force 2018 Force Package were tested in a complex Article 5 scenario that deliberately incorporated the most demanding challenges the Alliance might face. Photo by JWC PAO



Lieutenant General Darryl A. Williams, Commander NATO Allied Land Command, during CoG analysis at JWC. Photo by JWC PAO

menting upon the scale and accomplishment of the exercise, Lead Senior Mentor, General (Ret.) Karl-Heinz Lather stated: "From the Senior Mentors' perspective, TRIDENT JAVELIN 17 has, without doubt, been a success. It has stretched and stressed Training Audiences and the JWC to improve conceptual understanding of Major Joint Operations."

The Article 5 JAVELIN scenario and story lines, worked by Messrs Derksen, Strina, Mientus and Ball and their teams, offered all PMESII<sup>9</sup> challenges of a determined adversary willing to exploit deception and ambigui-

ty through conventional and unconventional means. Moreover, the actions of *Winter's OPFOR* in JAVELIN were those of a peer enemy who gave as good as he got, using all levers of power; military, para-military, social, political and economic.<sup>10</sup> Their assertive military actions were centred upon achieving rapid foreign policy outcomes and their application of "information warfare" was not constrained by Western ideas of ethical norm or international convention. So, JAVELIN certainly focused the mind of the Joint Force Command (JFC) and its components in conceptualising the peer

threat. We now have a great opportunity to develop this further in preparation for TRIDENT JUNCTURE 2018 through collaborative work with Partners, including the Baltic Defence College who have depth in this area.<sup>11</sup>

### Enduring relevance of JWC's "Big Rocks"

The JWC's six "Big Rocks", elaborated below, have been well received throughout the NATO military community and their significance endorsed by Training Audiences.<sup>12</sup> Fresh thinking has been given to their enduring relevance as we pivot towards Collective Defence, Article 5, and the challenges of the information battlespace. Our analysis suggests the "Big Rocks" remain relevant, albeit requiring different emphasis, as the character of warfare evolves to new geopolitical circumstances.

### 1/ Information Management

Depending upon whose account you subscribed to, the "Revolution in Military Affairs" should by now have provided a utopian view of short, high-tech wars, well-ordered battlefields, complete situational awareness and a seamless decision-action loop. Alas, the human condition in peace and war is not so



Training Audience's Combined Joint Operations Centre inside the JWC Bunker. Photo by JWC PAO



Reporting from the frontline: World News Today (WNT) television simulated newscast. Photo by JWC PAO

neatly addressed in the Information Age. The reality is one of "wicked" complex and unstructured problems and imperfect information with which to make decisions. Even where information is available, it is sometimes difficult to separate the wood from the trees.

Whilst the "fog of war" for Napoleon and von Clausewitz was due to a lack of information, now there is way too much and our capacity is finite. Acknowledging the limits of capacity, it is for joint commanders to identify and ruthlessly prioritise their Information Exchange Requirements (IER).<sup>13</sup> If, once upon a time, this essential role was delegated to a technical guy to fill in the IER detail, this cannot be valid in the Information Age—Information Management (IM) is command sport and an essential prerequisite for operational art. We must not forget that IER and CIS<sup>14</sup> planning for exercise is planning for war. It is a real-time operational planning activity involving the JFC, the components, the Communications Agency<sup>15</sup> and others, and deserves close attention.

Moreover, commanders and staff should give similar scrutiny and analysis to classification and accessibility of information. These too are sometimes erroneously viewed as "exercise-only requirements", but this denies the central importance and real-time criticality of command information. *Plan in haste—repent at leisure* might be an appropriate maxim for those who fail to give enough attention to what their information requirement is and how they

expect to receive it. All commanders should spend a bit of quality time with their IM and CIS people in order to better appreciate and address their information priorities.

### 2/ Battlespace Management

This links closely to challenges of volume of information and staff capacity to process it. By definition, Joint Warfare is a collaborative endeavour that benefits from high degrees of orchestration. As JAVELIN proved, the larger and more complex the endeavour, the greater the challenge; a JOA encompassing tens of thousands of soldiers, thousands of air sorties and dozens of warships, not to mention complex civil and information overlays, becomes a huge challenge for any joint operational commander and staff. The tyranny of distance, and therefore apportionment, was a real operational dilemma for commanders in JAVELIN; air sorties could not be flexed or re-tasked over the vast JOA in the way that they have been on operations in recent years.

If there is to be any relief to such dilemmas it begins well before the troops, planes and ships are anywhere near the battlespace. For it starts with a full and thorough Operational Plan Development<sup>16</sup> where a relentless pursuit of simplicity must be front and centre in the planning effort, in order to de-conflict actions in the battlespace. The sequence by which joint actions are coordinated and synchronised in

time and space sits at the heart of our exercises, particularly when confronted with the complexity of fire support coordination measures or the layered defences presented by the JAVELIN Anti-Access/Area Denial (A2/AD) challenges. The contested airspace and A2/AD bastions in JAVELIN were beyond the ability of any single component to fix and called for novel joint cooperation between air, land, maritime and Special Forces, not to mention Space and Cyber.<sup>17</sup>

### 3/ Civil-Military Integration

Since conflict is shaped by political, economic and social factors, so we must integrate a constantly expanding roll call of participants throughout planning and execution of joint operations. Yet civil-military cooperation has taken a different hue in the context of major conflict and Article 5, and sometimes operational planning teams need to be reminded that they are no longer attending to Capacity Building and Security Sector Reform, *à la* Afghanistan. Now the cooperation is more about established governmental and civic bodies—with strong, long established notions of sovereignty and ownership.

The balance has, arguably, shifted from Non-Governmental Organizations (NGOs), International Organizations (IOs) and the like. This is a very different take on the Comprehensive Approach from recent campaigning and HQs



Maj. Gen. Reudowicz and Maj. Gen. Andis Dilāns holding a signing ceremony for the "Letter of Intent on Cooperation" between JWC and Baltic Defence College, 17 August 2017. Photo by Baltic Defence College.



have sometimes been required to adjust their approach quickly. So, whilst a great deal has been learned through the years of Crisis Management and Cooperative Security, care must be taken to draw only the right aspects of that experience into the new operational paradigm.

For instance, Collective Defence requires a huge effort to mobilise quickly, then move and sustain forces. The requirement outstrips the capacity of the military alone and depends upon a civil-military logistic structure and enabling capabilities. Senior commanders and military analysts continue to highlight the requirement to remove civil bureaucracy between NATO states and improve mobility on intra-European routes. Similarly, liberated space is required to be handed over to civil administration—the complexity of this “relief in place” cannot be underestimated, particularly where terrain, airspace or territorial waters have been cleared of conventional forces, yet asymmetric threats persist. It is too late to be thinking about this aspect of Command and Control (C2) once boots are on the ground.

In a speech to the International Institute for Strategic Studies, General Sir David Richards offered a clear sense of the priority he gives to C2 in the Information Age: “For some years, I have been paraphrasing that great American General Omar Bradley who emphasised that professionals should place logistics before tactics. My version is that professionals first and foremost sort out Command and Control, followed by logistics, followed by

**Total Defence Concept:** Tor Honningsvåg, Senior Advisor, Norwegian Directorate for Civil Protection (DSB), during an interview with JWC Public Affairs. JAVELIN exercised the Norwegian Joint Headquarters’ interaction with civil government organizations that contribute to Norway’s Total Defence Concept in order to increase the Norwegian Armed Forces’ ability to conduct high-intensity NATO Article 5 operations. DSB’s overall task is maintaining a complete overview of various risks and vulnerability in general. The Total Defence Concept comprises society’s support for the Norwegian Armed Forces as well as Armed Forces’ support of civil society. Photo by JWC PAO



tactics. Get C2 right, putting the right people into it, and anything is possible.”<sup>18</sup>

The JWC exercises are starting to really stress Host Nation C2 dilemmas through planning phases and are revealing important themes in areas of civil administration and law during the transition from peace through the spectrum of conflict. Knowing who the key civilian interlocutors are—those “right people” that General Richards describes—and ensuring clear understanding of *modus operandi* for any particular nation’s Total Defence Concept

is absolutely critical to effective C2. Interestingly, a recent NATO C2 Centre of Excellence paper has added considerable emphasis to this requirement to describe *who* is responsible *to whom, for what* in relation to civil-military cooperation in the era of Total Defence.<sup>19</sup>

JAVELIN saw the integration of forces between Host Nations and NATO with nine separate nations in play. Norway’s Total Defence Concept allowed complex aspects of Alliance command, control and coordination, not to mention cost of conflict analysis to be considered. This work breaks new ground in doctrine development, and, whilst JAVELIN took great strides, operational dilemmas will now be refined further for JUNCTURE 2018 to challenge processes with Host Nation resilience structures, including state of order and national law on transition. This is a theme to be developed with Joint headquarters during the Academic Study phase of exercise preparation.

**4/ StratCom and the Information Environment**

This year’s SACT Strategic Foresight Analysis Report is revealing, particularly in Human and Technology themes.<sup>20</sup> The report describes areas of conceptual understanding moving so quickly that time horizons become almost meaningless; the rapidly changing information environment and human communication

BELOW: Simulated television newscasts highlight the prominent role of information warfare in the conflict. RIGHT: A simulated press conference, (TRIDENT JAGUAR 2015). Photos by JWC PAO



**THE INFORMATION ENVIRONMENT:**

The physical, virtual and cognitive space in which information is collected, processed, perceived, disseminated and acted upon. It consists of individuals, organizations and information systems as well as the information itself.

Annex B to MC 0422/4



is, probably, where evolution is most stark. As Hope Carr’s excellent article in our last journal (Issue No. 32, Pages 34-38) highlighted, the dawn of the information battlespace has resulted in commanders being drawn inexorably into areas of public diplomacy, which were previously the domain of statesmen and politicians. Not to participate is no longer an option; the “Battle of Narratives” is so dynamic and fundamental to theories of victory and defeat. Former SACEUR, General Philip Breedlove stated: “Battles will be fought on the ground, in the air, and at sea; but the next war will be won in the information battlespace.”<sup>21</sup>

Human communication is challenging at the best of times. It takes huge intellectual effort to stay ahead, delivering a proactive and assertive Strategic Communications (Strat-Com) narrative, rather than simply reacting to events. Think about the complexity of messaging at the strategic, operational and tactical levels. Think about how communications might be refined and nuanced for domestic and international audiences, whilst ensuring consistency and avoiding contradiction. Think about the vast array of communication channels and how each and every one is viewed by different demographics and segments of a population, and one begins to appreciate the challenge to be confronted. JAVELIN allowed this dynamic, fast moving aspect of modern military affairs to impact the Joint Force Head-

quarters and components in a particularly challenging way. It was enlightening to see how forces adjusted to the environment, developing tools and procedures to effect behavioural change favourable to the Alliance; for instance, via social media with their “#PuttingTheRecord Straight” campaign. Our thinking is moving at pace and the JWC Information Environment Working Group is advancing in concert with HQ SACT to address this complexity and heighten awareness of non-lethal means; Sun Tzu’s notion of “warfare as analogous to persuasion and a battle for hearts and minds.”<sup>22</sup>

Our drive to ensure that Training Audiences incorporate information activities

coherently, rather than add them as an afterthought, has gained real traction. This dimension must be at the forefront of operational planning and calls for a mind-set shift and also an organisational switch—most likely felt in terms of battle rhythm. So, as we now bridge from JAVELIN 2017 to JUNCTURE 2018, it is encouraging to note that JFC Naples has requested additional focus be placed upon Soft Targeting for their exercise in Autumn 2018.

**5/ Battle Rhythm**

If by rhythm we mean a pattern of recurring motion in the HQ, then it must also depend



**LEARN MORE**

Operational level logistics (Page 22)





The author, Colonel Wright, during an EXCON map room briefing with General Farina and Lieutenant General Rune Jakobsen, Commander Norwegian Joint Headquarters, in attendance. Photo by JWC PAO

### 6/ Joint Targeting

The importance of timely, accurate and intelligent targeting has been borne out in recent exercises, particularly where we have accentuated the grey areas between conventional and asymmetric threats and the requirement to coordinate and synchronise both lethal and non-lethal actions. Military professionals sometimes seem most comfortable at the kinetic end of the targeting spectrum. Perhaps this is because the principles of fire and movement are drilled into every new recruit from the outset of their military career and are therefore instinctive. What is less intuitive is the integration of information into the fires and manoeuvre mix. Yet, at the risk of stating the obvious, in the current Information Age this must become our foremost preoccupation.

So, we are consciously addressing fires planning to encourage appropriate balance between lethal-focused and non-lethal capabilities, ensuring that the latter is not simply added as an afterthought towards the end of the targeting process. We are tracking some exciting transformational thinking by Multinational Capability Development Campaign (MNCDC) into Integration of Lethal and Non-Lethal Actions (ILNA).<sup>24</sup> This seeks to establish a doctrine-based process for integrating lethal and non-lethal actions up front in

upon a sense of timing, flow and cadence. Whilst the former is about routine and “going through the motion”, it is those latter aspects of timing, pace and tempo in battle rhythm that support campaign synchronisation. For it is a flexible, adjustable rhythm that enables the “kingfisher moment” in operational art, rewarding the intuition of our very best generals: “Nine-tenths of tactics are certain, and taught in books: but the irrational tenth is like the kingfisher flashing across the pool, and that is the test of generals. It can only be ensured by instinct, sharpened by thought practicing the stroke so often that at crisis it is as natural as a reflex.” [T.E. Lawrence].

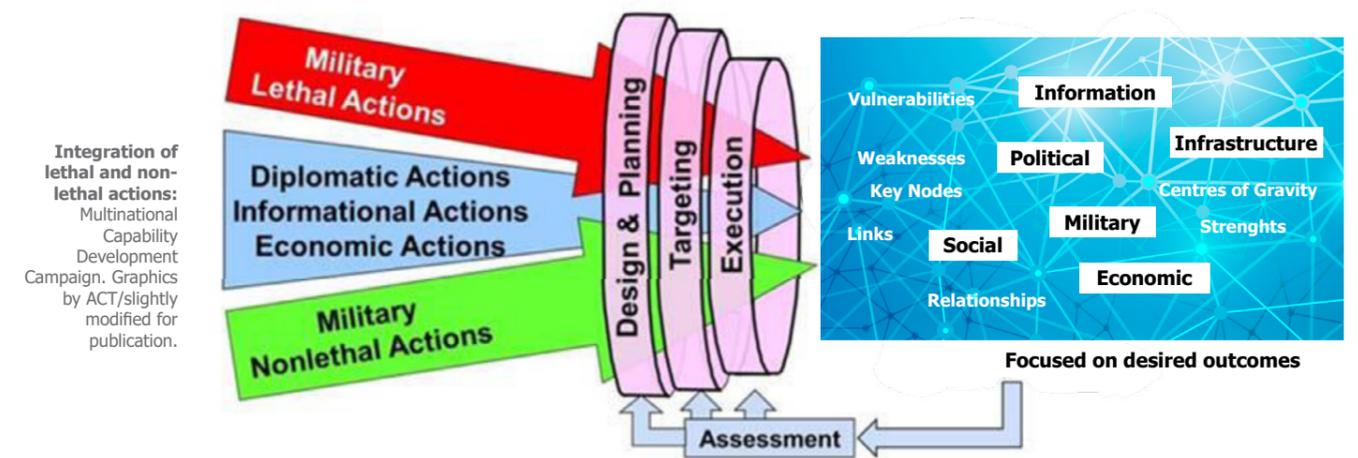
In exercises, we see the deliberate cycle of command and staff activities intended to synchronize current and future operations. These are the boards and working groups that coordinate activity according to different planning horizons and require a gearing mechanism to connect and synchronise them. Yet it is only the most agile headquarters that can gear shift in an accelerated environment and flex capacity of the staff across J3, J3/5 and J5 activities, depending upon changing events and priorities.

If the planning and assessment staff can adapt to a faster cycle, then they will allow that “kingfisher moment” of operational art in their commander, to exploit the fleeting opportunity. A set period Joint Coordination Cycle of, say, seven days, might limit the agility of the HQ and offer insufficient tempo to outpace an

adversary. If we really are all about decision superiority and moving at the speed of relevance through Boyd’s Cycle of Observe, Orient, Decide, and Act, then adjustable battle rhythm must be practiced.<sup>23</sup> This is as much about command culture, adaptability and the manner by which (traditionally) the Chief of Staff works up the team through Battle Staff Training and the like; what Lawrence described as “thought practicing the stroke”.



Major General Andrzej Reudowicz (right) with Rear Admiral (Ret.) Chris Snow at JFC Brunssum. Photo by JFC Brunssum PAO



### We are consciously addressing fires planning to encourage appropriate balance between lethal focused and non-lethal capabilities.

the operational design and planning process. The aim is to enable commanders to engage an adversary using a multi-domain approach to solve the sort of complex operational problems faced now days; and not just use the “hammer to crack the nut”.

Moreover, the exploitation of lethal battlefield actions to accelerate non-lethal information effects and vice versa (Sun Tzu’s hearts and minds) requires careful and detailed thinking. Appreciation of intended and unintended consequences is where operational art comes into play if military commanders are to wage “information war” to counter an adversary’s narrative, not to mention protect vulnerabilities within their own Centre of Gravity (CoG).

It is also worth noting that the sheer scale and tempo of major combat operations across a vast JOA might deny the luxury of centralised targeting processes, such as we have known on operations in recent years. It is becoming clear that fresh thinking may be required with regard to delegations and au-

thority, in order to deal with the quantity, scale and speed of demands such as they were on JAVELIN. Agility is particularly critical to the exploitation of time sensitive and dynamic targeting opportunities. Moreover, these challenges of volume and scale also apply to the tasking of surveillance and reconnaissance assets in order to conduct Battle Damage Assessment. There is little point in targeting if no capacity exists to assess outcomes; a requirement sometimes overlooked.

### Emerging themes in the context of Collective Defence

It is reassuring to note that so many of our observations from training ultimately coalesce around a relatively small number of themes; those hardy perennials we call our “Big Rocks”. That said, we cannot afford to stand still and must constantly review their relevance as we continue to evolve. With echoes of Bradley’s emphasis on logistics before tactics,<sup>25</sup> there are new logistical and legal dimensions that warrant increased prominence as we adjust from expeditionary campaigning to operating within territory of NATO Member States.

Lieutenant General Ben Hodges (the outgoing Commander U.S. Army in Europe) captures the legal and logistical pressures evocatively: “NATO forces should be able to move as fast in Europe as a Polish truck with a load of apples on the way to Lisbon.”<sup>26</sup>

General Hodges’ campaign to highlight the lack of a “Military Schengen” has done a huge amount to unlock bureaucratic paralysis in legal and logistical areas. JAVELIN

highlighted other areas in relation to states of emergency, conflict and war across Host Nations and concomitant impact upon the conduct of operations in the sovereign territory of NATO states. The stressing of the defence industrial base and other forms of support, including civil transportation, communications and energy infrastructure provided valuable stimulus, as did linkages with Norway’s Total Defence Concept at national, regional and local levels. This plays directly into the level of ambition set for JUNCTURE 2018, as will further work relating to risk appetite and thresholds in terms of casualties, platforms and materiel in Article 5 operations.

### Know the enemy, know yourself

Given that the practical part of our exercises starts with Strategic and Operational Planning, and culminates with execution of the Operational Plan, the JWC staff are uniquely placed to assess coherence and consistency through all stages of the planning process. Perhaps the most obvious assessment of consistency in joint force planning is revealed through the CoG analysis. It is all too easy for the thread of continuity to become stretched or severed, resulting in incoherent planning against the wrong campaign end-state. CoG analysis is one of the best indicators of this. So, time spent in analysis is never wasted, particularly in relation to well considered CoG analysis, which really is a foundation for any plan. Doctrine describes the detailed consideration a Joint Force Commander must give to analysing both





ABOVE: JAVELIN (left) and the Scenario Wargame in preparation of TRIDENT JUNCTURE 2018 (learn more about the Wargame on Page 77). Photos by JWC PAO

his own, and enemy CoG: Characteristics, capabilities, or localities from which a... military force... derives its freedom of action, physical strength, or will to fight.<sup>27</sup>

A CoG can sometimes unlock a campaign end-state and is worthy of close personal engagement by the Joint Force Commander. The commander must decide who, or what, has central importance within the context of the campaign, thus allowing him to allocate resources, either to protect the CoG of his own force or to attack that of his opponent. Perhaps it was ever thus, but CoG at the operational level seems to frequently focus upon intangibles relating to the battle of wills and narratives. This could be to do with the ubiquity and all-encompassing nature of the information environment and social media phenomenon. Amongst Training Audiences the greater weight of analysis often seems to be

given to enemy CoG, at the expense of consideration of own critical strengths and vulnerabilities. And yet the need to protect the CoG of friendly forces against, for instance, the tit-for-tat playground manipulations of “fake news” has never been more prescient. If not checked, such propaganda can drive a barb to the heart of morale, resolve and cohesion. This is about protecting the force, the mission and even the political state. In the information environment tactical actions have strategic consequences and the “flash to bang” is measured in minutes rather than hours. We must know our vulnerabilities and ruthlessly protect them. The simulated information environment on JAVELIN was relentless and unforgiving, just as in real world, and stretched every sinew of the Joint Force Commander, who responded positively to this reality of modern day campaigning.

**To the work ahead**

This article only really scratches the surface of Warfare Development and innovation in the JWC. With more time and space, it might have been possible to expand on the importance of exercise setting and scenario work, helping to conceptualise Major Joint Operations and Collective Defence. As one recent visitor put it, “scenario opens the door to interoperability”.<sup>28</sup> In that sense, the new OCCASUS scenario for JUNCTURE 2018 represents a quantum step forward in exercising Collective Defence and our plans to build scenario material in TOPFAS are genuinely transformational.<sup>29</sup>

Moreover, this article has touched doctrine development work only fleetingly in the context of Battlespace Management and Logistics, but doctrine imbues everything. ↗

we were reminded on JAVELIN, it is our key to communication and interoperability. Discussion without definition is pointless and without prescriptive method we risk cross purpose communication and confusion. And whilst this article has covered some of the work in the so-called information environment, there is much else going on in our Concepts and Capability Integration area, not least in the Space and Cyber Domains, and enhancing the sophistication of Operations Assessment to assist commanders in making evidence-based decisions. These might be topics for future articles in this journal; suffice it to say there is much work to be done in the months ahead, it feels relevant, real and very much to the point of NATO’s current effort.

So, Europe may well have entered what analysts view as a dangerous new phase. The fast-changing geopolitical landscape makes for interesting work in Warfare Development and a fascinating time to be serving here in NATO’s Warfare Centre. We have a unique and privileged purview of *Generalship*, and the higher command and staff within NATO. We see the most talented commanders and staff operating in challenging and stressful conditions. It would be impossible not to be humbled and impressed by this. Yet the privilege comes with responsibility, which is to offer valid observations from training back into Warfare Development. It behoves us all to reflect upon this, the *raison d’être* of training and warfare in NATO. That linkage must be self-evident and plays to the very heart of multi-nationality, interdependence and interoperability. We are limited only by our own imagination! ↗



General Dwight D. Eisenhower, appointed as NATO’s first Supreme Allied Commander Europe (SACEUR), 19 December 1950. Photo by NATO

“ THE PLAN IS NOTHING, BUT PLANNING IS INDISPENSABLE. GENERAL DWIGHT D. EISENHOWER ”

- state of Russia’s Armed Forces”, 16 November 2017 (www.romesquared.eu).
- 9 PMESII: Political, Military, Economic, Social, Infrastructure and Information.
- 10 Although Lt Cols Derksen, Mientus and Winter, Sqn Ldr Ball and Lt Cdr Strina are singled out here, there was a vast staff effort behind them from all Branches and the deployed Training Teams; all deserve special credit.
- 11 See Baltic Defence College and Potomac Foundation “Baltic Security Net Assessment”, 1 October 2017.
- 12 JWC’s “Big Rocks”, described in our Operational Staff Handbook, are: Information Management; Battlespace Management; Civil-Military Integration; Strategic Communications (organisation and messaging); Battle Rhythm and Joint Targeting.
- 13 AJP 6, Allied Joint Doctrine for Communication and Information Systems elaborates requirements clearly.
- 14 Communication and Information Systems.
- 15 NATO Communications and Information Agency and NATO CIS Group.
- 16 Phase IV of NATO Crisis Response Planning; development of the CONOPS and OPLAN.
- 17 See the article by Capt (US-N) Bill Perkins (JAPCC), also in this edition of the journal.
- 18 General Sir David Richards, “Future Conflict and Its Prevention: People and the Information Age”. A speech to IISS on 18 January 2010.
- 19 NATO Command and Control Centre of Excellence Seminar Review 2017, page 52 “Considerations in the Re-establishment of Total Defence”.
- 20 Strategic Foresight Analysis 2017 Report, Supreme Allied Commander Transformation (SACT), dated 4 October 2017.
- 21 General Philip M Breedlove during a visit to the JWC on 29 September 2014.
- 22 Steven Combs, “Sun Tzu and the Art of War: The Rhetoric of Parsimony”. Quarterly Journal of Speech 3: 276–94, August 2000.
- 23 “Science, Strategy and War”, The Strategic Theory of John Boyd”, December 2006, Routledge.
- 24 The US-led Multinational Capability Development Campaign (2017-2018), Integration of Lethal and Non-lethal Actions (ILNA). See www.act.nato.int/mcdc
- 25 Op. cit.
- 26 Lieutenant General Ben Hodges, Commander US Army in Europe, “The Achilles Heel of NATO”, Reuters, 17 November 2017.
- 27 AJP-5 Allied Joint Doctrine for Operational Planning, 2013, P 2-32.
- 28 Brigadier General John Healy, Director ECJ7, US European Command (EUCOM).
- 29 TOPFAS is NATO’s operational planning tool: Tool for Operational Planning Facility Area Service.

**Recommended Reading**

\* NATO Strategic Foresight Analysis, 2017 Report [www.act.nato.int/images/stories/media/doclibrary/171004\\_sfa\\_2017\\_report\\_hr.pdf](http://www.act.nato.int/images/stories/media/doclibrary/171004_sfa_2017_report_hr.pdf)

**END NOTES:**

- 1 A2/AD or Anti-Access/Area Denial.
- 2 Including Academic Packages, Key Leader Training, support to Operational Planning, advice to Battle Staff Training and Computer-Assisted Command Post Exercises (CAX/CPX).



**Capabilities:** NATO’s future structures must be robust enough to cope with the requirements of a major all-out conflict. Royal Air Force A400M lands at Lielvarde Air Base (Latvia) to support RAMSTEIN DUST II. Photo by Miks Uzans, NATO.



**The way ahead:** The unveiling of the logo of upcoming Brussels 2018 Summit, which will be held on 11 and 12 July 2018. Photo by NATO



Italian soldiers use a floating bridge assembled by German engineers to ferry vehicles during Exercise TRIDENT JUNCTURE 2015. Photo by Master Corporal Jonathan Barrette, Canadian Forces Combat Camera. **RIGHT:** Train loaded with tanks, photo by U.S. Army



by LIEUTENANT COLONEL HERVÉ RIGA  
French Army  
Transformation Delivery Division,  
Joint Warfare Centre

# TOWARDS AN INTEGRATED AND EXPEDITIONARY OPERATIONAL LEVEL LOGISTICS

## An initially heavy and oriented logistics concept

### 1.1 Home support

Without going back in time to Napoleonic wars, it is worth starting from the initial understanding of operational logistics, which is linked to the purpose of NATO. From the founding of NATO until late in the 20th century, the enemy was the Soviet Union. The Soviet military was considered as having the capability to invade most of Europe, and European forces could only delay the enemy

advance long enough for Allies to deploy and counter-attack. Because of the presumed swiftness and violence of a Soviet attack, the NATO troop lay-down covered all nations with national resources assumed to be appropriate. The somehow doomed forces had to be resupplied, and if so, mainly through available national assets uncoordinated by NATO.

### 1.2 American support

The operational and multinational level logistics would then have to be considered from the Western ports of Europe onwards, vastly dominated by American assets relying upon the remnants of devastated hosting nations. These

were plans to react to a Soviet Blitzkrieg on a continental scale. The impact of this approach, with all plans being written then, is still visible today as the majority of the strategic and operational airlift capacity lies in the United States and not in Europe. Indeed, the planes produced during the Cold War are still in use and the European airlifter Airbus A400M is a late, but much welcome mitigation asset. This is why the NATO operational logistics was then very land-centric and movement-oriented. All troops and resources would have to be brought strategically to Western Europe, then operationally towards the Eastern lines, to support the forces reconquering lost NATO territory.

Operational logistics has become a mobile shop, able to anticipate what the requirements will be depending on the evolution of the tactical situation, where, and per customer.

### 1.3 Planned support

The plans were regularly updated and exercised to include movement across Europe. As an illustration, the live exercise *Kecker Spatz/Moineau Hardi*, or Bold Sparrow, took place in September 1987 involving 75,000 German and French troops and moving in the federal states of Baden-Wuerttemberg and Bavaria, with all appropriate operational level logistics. Even today, most German bridges still have yellow squares telling bridge weight limits. The concept, the assets, the infrastructure and somehow the plans were a heritage of the World War II in Europe with the exception of the enemy size and language. Operational logistics was consequently preparing to support the battles similar to those of the previous war. That is when, adding to confusion, the Soviet Union, and with it, the perceived threat, ended.

### 1.4 Lost enemy

The fall of the Berlin Wall symbolized the end of the Cold War after Glasnost had seemed to be nothing, but an open television show on the collapse of the gigantic Red Bear. All of a sudden, Russia appeared to be much less of a threat and caused NATO to look at its purpose. Indeed, what is the purpose of NATO, if no nation, or group of nations, poses a threat to Collective Defence? The numerous crises emerging since the 1990s have answered to that question. Consequently, NATO has adapted to a multi-purpose tool to face any crisis, ranging from natural disasters to Alliance defence, with a Level of Ambition reaching today the ability to manage two Major Joint Operations and six

Small Joint Operations, if required. Additionally, missing an enemy had a massive, if not re-founding, impact on the operational level logistics: The strategic dimension was mildly impacted because of the overwhelming importance of American assets and the new availability of the Volga-Dnepr Antonov fleet to contract, and also because of the ever-growing worldwide sea transport capability. However, all the troops in place, all the stocks available close at hand, all the vehicles combat-ready at or near their engagement area now had to “reach” their combat zone, and in proper order, possibly for an immediately following of offensive phase.

### 1.5 From a “supermarket” concept to versatile support

Operational level logistics is no longer a system of settled supermarkets where customers will come and get mostly the same goods on a regular basis, in line with guided sales expectations. Operational logistics has become a mobile shop, able to anticipate what the requirements will be depending on the evolution of the tactical situation, where, and per customer. It is linked to entry points that extend organized but intermingling tentacles throughout a limitless multi-dimensional space of combat. Thus, operational logistics becomes a system of systems. Although the requirement is identified, a model is not immediately formalized. Two campaigns will facilitate defining this multinational requirement.

### When operational logistics becomes expeditionary and initiates integration

#### 2.1 Expeditionary logistics

Expeditionary logistics is a process some NATO Nations, such as the United States, Great Britain and France, have long mastered and sustained, even after the World War II or their respective colonial eras. But that was an individual capability. The Iraqi and the Afghan campaigns would provide the breeding ground for the NATO Alliance to really integrate operational logistics into a multinational expeditionary environment. The success of the second Iraqi campaign clearly proved an updated plan off the shelf was not sufficient anymore. Although heavily marked by the seal of the American procedures and lead, the

operational level logistics has become more multinational in many regards. Agreed mutual support with regard to accommodation, supplies, transportation and many more capabilities was highly appreciated. When cautious planning was conducted for this operation, the success of the advance of troops overstretched the logistic lines of communication from entry points in Kuwait and Baghdad. The U.S. forces then demonstrated an effective, though tense flexibility that only utterly expeditionary troops were able to stand, at the price of soldiers’ comfort, at the cost of *ad hoc* processes. Adaptability of the operational level logistics system and actors made the support of front line troops possible and enabled success.

#### 2.2 Integrated logistics

The Afghan campaign—more than being a model of expeditionary operation—proved particularly supportive of the integration of operational level logistics. When expeditionary in terms of strategic logistics, the operational level was more conventional, despite the level of threat on main supply roads and tactical level attacks on convoys. The transportation networks were clearly identified and unchanged, and as a consequence, a form of unsafe (due to the standing threat) routine would take place on the Pakistani and Afghan roads as well as in air corridors. This unsecure but lasting environment in this long mission (2001-2014) involving so many NATO, Partner and non-NATO Nations gave enough

## LOGISTICS *In Brief*

While the term “logistics” can encompass several different meanings, in essence it has to do with having the right thing, at the right place, at the right time. NATO defines logistics as the science of planning and carrying out the movement and maintenance of forces. It is of vital importance for any military operation and, without it, operations could not be carried out and sustained. Logistics can be seen as the bridge between deployed forces and the industrial base, which produces the material and weapons deployed forces need to accomplish their mission.

[https://www.nato.int/cps/en/natolive/topics\\_61741.htm](https://www.nato.int/cps/en/natolive/topics_61741.htm)



“U.S. operational level logistics planning was driven by strategic decisions largely reflective of political considerations. With the majority (75%) of U.S. military logistics forces in the reserve component, there is an extended period of time for mobilization before those forces are available for combat. The strategic decision was made to initiate operations before full mobilization of reserve units. The result was operational plans that accepted risks in support capability in order to achieve surprise.

As opposed to the 'Moving Mountains' approach of the first Gulf War, Operation Iraqi Freedom was a just-in-time operation. This lean approach put a premium on situational awareness and rapid response. The compressed response cycle flattened the traditional organizational authorities between operational and tactical levels of command. As the operational level logistics commander, I routinely directed resupply convoys directly to tactical units. This compressed organizational model has continued, as strategic and operational assets are now supporting isolated units in Afghanistan and throughout the world. The echeloned structures of the Cold War are increasingly being modified to meet the realities of modern conflicts.”

**Major General (Ret.) Charles Fletcher Jr.**  
Former Director of Operations and Plans,  
U.S. Transportation Command



French troops within NATO's Enhanced Forward Presence (eFP) taking part in Exercise SPRING STORM, 12 to 26 May 2017, at Tapa Manoeuvre Camp in Estonia. France has committed a company as part of the multinational battalion for which the United Kingdom is the Framework Nation. Photo by NATO

**LEARN MORE**  
NATO Force Integration Unit  
Estonia and eFP on Page 78.

time to test multinational integration. All ISAF-identified convoys were controlled by the American Movement Control Teams at the border crossing points. The information would then be reported to the Combined Joint Movement Control Centre (CJMCC) and aggregated to other in-country sources. The Movement Control Centre Europe (MCCE) would optimize the existing air transport, controlled from NATO's Air Movement Coordination Centre (AMCC) in Eindhoven and enable different nations' cargo to board a single plane, pending a technical arrangement. Nationally owned tracking systems of convoys were centralized in the CJMCC: the EVE software (and more) of NATO's Logistics Functional Area Services (LOGFAS) suite was then used as a blue force tracker and it was visible on one of the ISAF Joint Command's Combined Joint Operations Centre screens.

The only limitation to the integration of this later information was the compatibility

between the respective national levels of classification and the LOGFAS network, too high for some, or too low for others. Despite the regionalization, facilities were available to all nations, as was the Role 3 Medical Treatment Facility of the Kabul Afghanistan International Airport. Exchanges of nationally-owned resources could have taken place, such as for flares or ammunitions, initiated by a request by one, socialized by the mission chain of command and eventually agreed and executed bilaterally. The entire mission both for land and air traffic would use the LOGFAS system: The Nations, SHAPE AMCC or Joint Force Command Brunssum and Naples, down to the logistics and movement staff at all regional commands. The system was also used for logistics reporting from tactical to strategic level. However, the integration of this system revealed a limit in the ground transportation providers that were contracted. Visibility was achieved with the first contractor, but later, it was possible

that confusion generated due to large amounts of subcontracting and also due to the amount of pilferage and kinetic losses that occurred in ground movements.

**2.3 A biased image**

The Afghan campaign generated a new set of long-lasting biases. A whole generation of logisticians grew in the light of the ISAF format, and that was their sole operational experience in many cases. Back to the Cold War period, most, if not all, resources were initially available in the homeland; the vision was that all resources had to come from outside the Joint Operations Area (JOA) or be contracted. This generated a first enduring bias: Host Nation Support (HNS) was intellectually ruled out. Contracting became a very convenient way for NATO Nations to minimize their own logistics assets in their force generation, while still paying for external services. This excess of trust is another bias since contracting cannot cover



main to train, fully integrated into the planning process, operational logistics decision-making and reporting. The formal requirement of an operational level set of skills and capabilities was now obvious to all and had to be formalized. This was done through the concept of Multinational Joint Logistic Command and then upgraded to the units-augmented version: the Joint Logistic Support Group (JLSG). The JLSG was particularly considered to support the NATO Response Force (NRF), whose launching was decided at the NATO Prague Summit in 2002, but it was also considered to support any operation. The JLSG was dependent of the Joint Force Command J4 (logistics) during peacetime, but independent from the Joint Task Force Headquarters and acquired a component level status during an operation.

The designers of the JLSG decided to build a very flexible and adaptable structure, present both in the NATO Command Structure and in the NATO Force Structure, based on a Core Staff Element, able to welcome, train and integrate an internal and an external augmentation of the headquarters, to eventually command an *ad hoc*, component level operational deployable headquarters. The contribution by the nations to this component headquarters was designed to mirror the volume of troops made available to the JLSG Commander

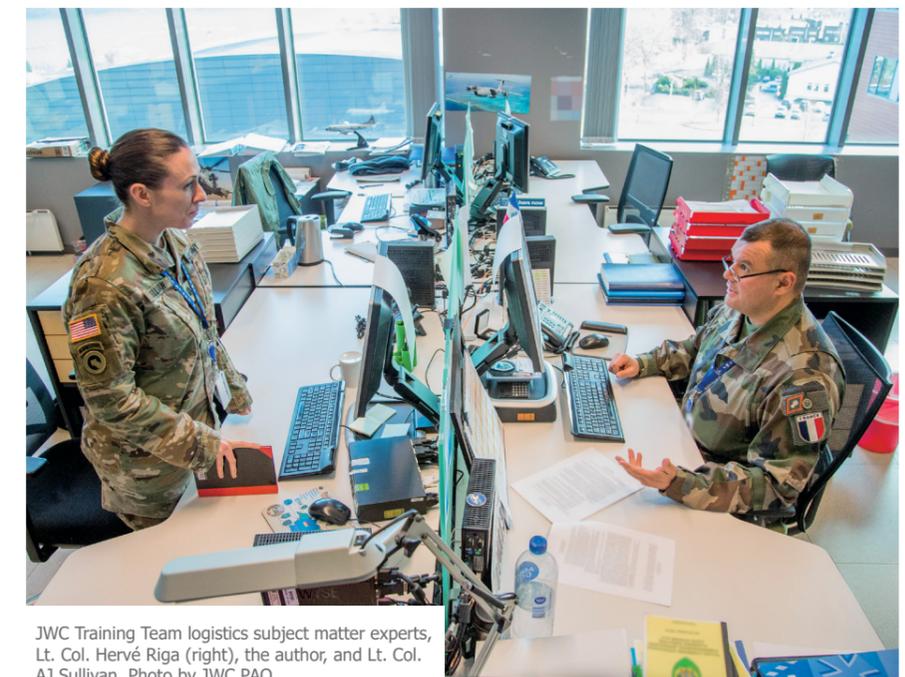
through the force generation process. Regrettably, this smart approach became a weakness in the sense that the augmentation was taking place when all contributing headquarters and the nations had to prepare for the same crisis. Contributors then tend to forget that this cost- and manning-saving option, best supporting operations, is only a peacetime solution, and that the normal crisis situation is in fact a full manning of the structure, as politically agreed. Although long-existing now and recognized by all, the JLSG was used only once for real world operations in Kosovo. However, the scale and duration of the mission did not enable an indisputable and long-lasting recognition of the efficiency of the structure, despite a successful execution of the mission.

In spite of problems with limited communications architecture, the JLSG from Joint Force Command Brunssum that deployed to Portugal for the NRF certification exercise TRIDENT JUNCTURE 2015 proved that the JLSG concept, when properly manned, trained and executed, was highly effective at providing logistics unity of command and effort. The JLSG relationship with counterparts, such as the maritime component's Forward Logistic Site or the air component's Deployed Operating Base, continues to fine-tune: "The Joint Logistic Support Group is a logistics-centric,

everything independently from the security situation. A third bias is that the force can manoeuvre freely inside the JOA. This point does not relate to the freedom of movement possibly hampered by enemy actions, but to the authority of the Host Nation welcoming the force. When the Afghan Transitional Government was not initially capable to control movements, other conflicts might have taken place in other states that retained control on their sovereign soil.

**2.4 Creating the modern operational level logistics: an update**

From 2004, the newly established Joint Warfare Centre (JWC) started to train the nations due to take over the lead of the ISAF mission, in Stavanger, throughout Europe, and in 2011, as far as Washington State, to contribute to training the United States Army I-Corps. The integration of operational logistics was not only a requirement or fact, but became a do-



JWC Training Team logistics subject matter experts, Lt. Col. Hervé Riga (right), the author, and Lt. Col. AJ Sullivan. Photo by JWC PAO



The operational level logistics integration from tactical to strategic, which encompasses military and civilian personnel, is now trained extensively at the Joint Warfare Centre.



Exercise TRIDENT JUNCTURE 2015  
NATO photo by Karl Schoen



Unprecedented logistics effort: A brigade mobility officer posing in front of equipment loaded on train for Exercise SABER GUARDIAN 2016 at the Port of Constanta, Romania. Photo by U.S. Army Europe.

force generated, deployed, component-like joint organization, discharging operational level responsibilities through joint logistic operational and tactical level activities; its Commander acts at the same Command and Control level as a Component Commander.”<sup>1</sup>

This structure embodies the requirement for an integrated, multinational and expeditionary operational level logistics command headquarters and allows NATO to meet its Level of Ambition throughout the spectrum of possible contemporary operations. But is this set of operational level tools sufficient?

**What about the future?**

NATO must constantly adjust to a multitude of functions to ensure it is ready to handle future challenges. Ongoing conflicts, crises or tensions mirror the evolution of technologies, the development of media and the blurring of reality through the prism of variably controlled or consolidated information. However, despite a well-defined, planned and trained deployment process, the JLSG has a notice-

to-move that does not meet the requirement of the deployment of the Very High Readiness Joint Task Force (VJTF), but it remains the first deploying enabler for the arrival of the force.

**3.1 The Ukrainian trigger**

The Ukrainian crisis, starting in November 2013, changed the Euro-Atlantic security. The Russian intervention in Crimea challenged the speed of NATO’s decision-making process and, to some extent, its capabilities. Russian troops deployed without appropriate military uniforms or affiliation with Russian units, and disinformation proved hard to counter, even once the identity of these un-flagged troops was unveiled. The battle was not taking place only in the field anymore, but it became hybrid, as it involved the population, the traditional media and also social networks in a swarm of disinformation. As a result, Russian troops were *de facto* in Ukraine before NATO could reach political consensus on options. Beyond weapons, Russia used NATO’s Centre of Gravity—cohesion of the Alliance—of 29 Nations, to take advantage through the fast,

disguised decision of one. This event also renewed the interest in a near-peer engagement and how to support it. Operational logistics was revisited, and it was decided that it had to go one more step beyond.

**3.2 Faster and more expeditionary forces**

The 2014 Wales Summit acknowledged the requirement for a faster deployed force, *i.e.* the VJTF. Regrettably, the notice-to-move, and the augmentation process of the JLSG (like the rest of the NATO Force), would not match this requirement. Pre-deployed troops, namely the enhanced Force Presence (eFP), together with the creation of six, and now eight, NATO Force Integration Units (NFIUs)<sup>2, 3</sup>, is the way to enhanced force readiness and to decrease the time to deploy. From that moment on, the JLSG is not the complete solution for operational level logistics, but represents the bulk of the solution under the Joint Task Force Headquarters Support Division (J1, J4, J8, MED).

**3.3 Wider integration**

Not only does wider integration meets the



ABOVE: ACT uses six focus areas, forming the lens through which the transformation of NATO’s military posture is viewed. One of these areas is logistics and sustainability. Graphics by ACT.

NRF requirement, but it contributes to the VJTF backing up on already in place NFIUs (that “semi-permanent Operational Liaison and Reconnaissance Team”—published in *The Three Swords Magazine* Issue No: 31—written by Wing Commander Mark Attrill) and the

eFP. The peacetime JLSG also naturally contributes to the preparation and execution of the Graduated Response Plans (GRP). The operational level logistics is therefore more important and integrated than ever.

Organized around the central JLSG Headquarters structure, the multinational and adaptable JLSG tactical level logistics units will intermingle based on the uniqueness and the requirements of each mission. A comparable relationship is established with strategic logistics—although logistics remains primarily a national responsibility—in order to optimize costs, time and quality of service, thanks to the integrated and comprehensive NATO Command Structure planning and execution. These achievements are enabled by a real and clear political guidance, through the Wales Summit, translated in military effects (NFIU, eFP, GRP) and validated by the ongoing studies on the enablement of SACEUR Area of Responsibility.

NATO is also embarked on a major project aimed at facilitating troop movement within and across NATO Nations, so setting the theatre for movement has re-emerged as

a crucial task for Collective Defence, as it was in the Cold War. This strategic level concern is in fact facilitating the operational level logistics that would operate there in case Article 5 is triggered.

Another strategic level concept being implemented and supporting the operational level logistics is the Operations Logistics Chain Management (OLCM). The OLCM provides processes, procedures and tools for NATO and Nations to conduct collaborative logistics planning and to prioritize, synchronize and coordinate activities prior to and during an operation in order to increase the speed and efficiency of logistics support and reduce duplication of resources and thus costs. The OLCM concept is considered during the JWC TRIDENT Series of Exercises and it will, in particular, be used during TRIDENT JAGUAR 2018 and evaluated during TRIDENT JUNCTURE 2018.

**3.4 Comprehensive operational and multinational logistics**

Operational logistics now benefits more directly from civilian support with further de-





**The Operations Logistics Chain Management (OLCM)**

The OLCM is designed to increase visibility of agreed logistics requirements, resources and processes, reducing duplication of national logistics chains and competition for contracted resources, during all phases of a combined joint operation.<sup>4</sup> This programme will support implementation of the collective logistics principle: The collective approach undertaken by NATO and Nations to plan, generate, synchronize and prioritize national and NATO logistics capabilities, resources and activities to deliver logistics support to NATO missions, operations and exercises, by making use of common processes and organizational structures.<sup>5</sup>

The OLCM Programme is well under way, with incremental deliveries of products, including a modern Logistics Functional Services (LOG FS) capability, continuing through the planned Full Operational Capability in 2020.

velopment of the NATO Support and Procurement Agency (NSPA), as decided at the Lisbon Summit in 2010. Contracting has always been available, but involved a certain delay to be implemented. Today's available Rapidly Usable Enabling Contracts (RUECs) greatly simplify some aspects of operational level logistics thanks to the early availability of assets (Real Life Support) and supplies (fuel). Also, the NSPA representatives are in place in the Joint Task Force Headquarters and the JLSG early on, and contribute to operational level and JLSG planning. To augment the JLSG, a comparable structure is being generated in the city of Mons, close to HQ SHAPE, *i.e.* the Standing JSLG (SJLSG), in interim version (I-SJLSG) until 2019, in order to better support a force deployed in neighbouring countries.

One additional step beyond, all NATO Contributing Nations and Partners coordinate and report availability of infrastructures and resources to HQ SHAPE for a better deployment and support of the GRP and more. This operational level logistics integration



Military equipment and vehicles loaded on a boat during JOINT VIKING 2017 in Finnmark, Norway. Photo by Kristian Berg, Forsvaret

from tactical to strategic, which encompasses military and civilian personnel, is now trained extensively at the JWC. In 2003, logistics training was more theoretical than practical, but training today is conducted in a comprehensive and practical environment. All civilian (*e.g.* political, Host Nation, NSPA, contractors) and military (*e.g.* all components, local forces, local militias, police) personnel are involved in the training, which is conducted under the LOGFAS system, fed with a comprehensive database, to ensure all those involved are ready for any mission, from traditional to unconventional/hybrid challenges and threats.

**Conclusion**

Operational level multinational logistics has advanced from plans inherited from the Cold War, to out-of-area expeditionary operations in largely ungoverned spaces, to eventually the appropriate adaptable tool to match the requirements of polymorphous modern and future warfare. It is now expeditionary and integrated, not only within NATO, but also nested in national civilian logistics capabilities. It provides ultimate flexibility to the operational level commander, thanks to highly trained and interoperable headquarters and units. It is com-

prehensively planned and commanded, in line with Contributing Nations' sovereignty, and able to adapt to all time and terrain constraints. It is the responsibility of the JWC to integrate this transformation both in preparation phases and during exercises as well as through contributions to NATO logistics doctrine. This is achieved not only by logisticians, but all who strive for excellence and are dedicated to Training Audiences, whether in Stavanger or across the various NATO Headquarters locations. ✦

**END NOTES:**

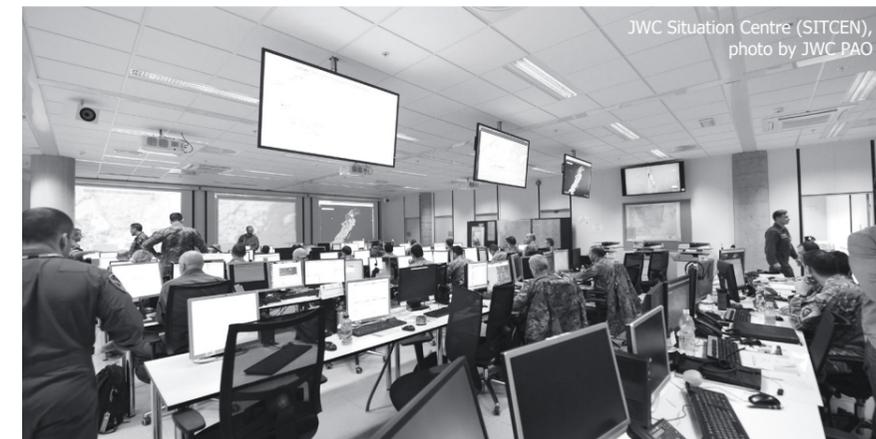
- 1 This definition is available in AJP-4.6(C) Joint Logistic Support Group.
- 2 See article by Wing Commander Mark Attrill, Deputy Commander of NFIU Estonia, in *The Three Swords Magazine*, 31/2017.
- 3 Now eight NFIUs exist in Sofia (Bulgaria), Tallinn (Estonia), Riga (Latvia), Vilnius (Lithuania), Bydgoszcz (Poland), Bucharest (Romania), and from 2017, Szekesfehervar (Hungary) and Bratislava (Slovakia).
- 4 Bi-SC Operations Logistics Chain Management (OLCM) Roadmap, dated 8 August 2016.
- 5 MC 319/3, NATO Principles and Policies for Logistics, dated 9 July 2014.



# HICON

Higher Control: An integral part of all exercises

by **COMMODORE HANS HELSETH**  
Royal Norwegian Navy  
Former Special Adviser to Commander Joint Warfare Centre



JWC Situation Centre (SITCEN), photo by JWC PAO

**T**he Joint Warfare Centre (JWC) fills many core functions during exercises. Real Life Support is one of the building stones to enable any exercise physically to happen, as is Computer Information Systems. The Exercise Control (EXCON) organization, with its Situation Centre, is at the hub of the operations, ensuring that exercises run according to the pre-planned Main Events List/Main Incidents List (MEL/MIL), and that Opposing Forces (OPFOR) and Computer-Assisted Exercises (CAX) support the desired

outcomes. The scenario is important to explain the artificialities of any exercise, while White Cell role players and media simulation add realism, thus exposing Training Audiences to challenges at various levels of complexity. JWC Training Teams ensure that proper advice and guidance are provided to the NATO entities being trained. Yet another core function is Higher Control (HICON).

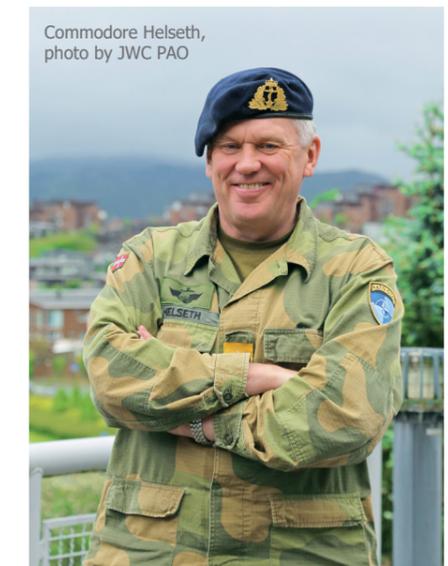
HICON is an integral part of EXCON and serves, of course, exactly the same purpose, which is to create an environment where Training Audiences can meet their Train-

ing Objectives and be certified as a NATO Response Force Headquarters or a Joint Task Force Headquarters. As experience was gained, it was realized that HICON needed to be established as an entity of its own. However, depending on the character of the exercise, SHAPE involvement may differ.

In a typical TRIDENT JAGUAR exercise, SHAPE and NATO HQ, including the latter's political parts, will be duplicated during the execution phase by the HICON team. During larger or more complex exercises, SHAPE and the NATO International Military Staff may be directly involved in the execution, but even more so during the planning phase where all the strategic documents are developed, including the Strategic Planning Directive for subordinate headquarters and the Concept of Operations/Operation Plan.

During all phases of planning and execution, and in all corresponding preparatory activities, HICON will by necessity be involved, duplicating and imitating political and strategic processes as required. A certain element of role play is also included, with members of HICON simulating whoever the Training Audience requires to speak to.

HICON is a powerful tool in the hands of the Exercise Director, Commander JWC. If an exercise needs to be steered in a certain direction to fit the scenario and the pre-planned activities, a political statement by NATO Secretary General or by an individual nation, sent through NATO Military Authorities (Military



Commodore Helseth, photo by JWC PAO



Committee and SACEUR), may quickly influence the Training Audience in the right direction, and still be seen as a realistic limitation or opportunity. In addition to facilitating the political play, HICON also contributes to Strategic Communications (StratCom) messaging and legal aspects of the exercise or operation.

It will be evident that HICON staff need specific skills. In-depth knowledge of processes and procedures at both NATO HQ and SHAPE is required. The International Military Staff, which is working from NATO HQ, will normally deploy one or two of their staff in support of HICON, which for practical purposes will be set up at SHAPE. Coordination with EXCON is a daily, if not continuous process.

As NATO exercises evolve in complexity and ambition, encompassing Article 5 operations against a peer enemy, SHAPE involvement in such exercises is expected to grow, together with an increased interest from Brussels. The JWC HICON will, in this case, assume a coordination role, ensuring that all activities and decisions fit into the exercise design, and also that the interests of the Primary Training Audience are safeguarded.

HICON at the JWC is relatively new in the sense that it became formalized as late as



ABOVE: Lieutenant Colonel Michael Derksen, JWC Chief Scenario Branch, supporting HICON. Photo by JWC PAO

in 2016. Up to then, it had been set up rather *ad hoc*. The JWC's Standing Operating Procedures and organization are now regulated, and a trained cadre of about seven to eight individuals with different but relevant experience has been formed. It is recognized that political aspects must be incorporated into every exercise to create challenges for the Commander to be trained along with his political, legal and StratCom teams. The Commander will be tasked to provide personal updates by VTC in order to communicate with key military personnel (SACEUR or HICON role players), and there will always be someone around for him to discuss particular aspects of the operation with. He will also need to communicate with SHAPE on SACEUR's critical information requirements, thus practicing in as realistic a setting as possible. HICON is the tool that makes all this happen, as quickly as the exercise demands. This role will increase in importance as NATO starts to plan for and execute the new TRIDENT JUPITER Series of Exercises.

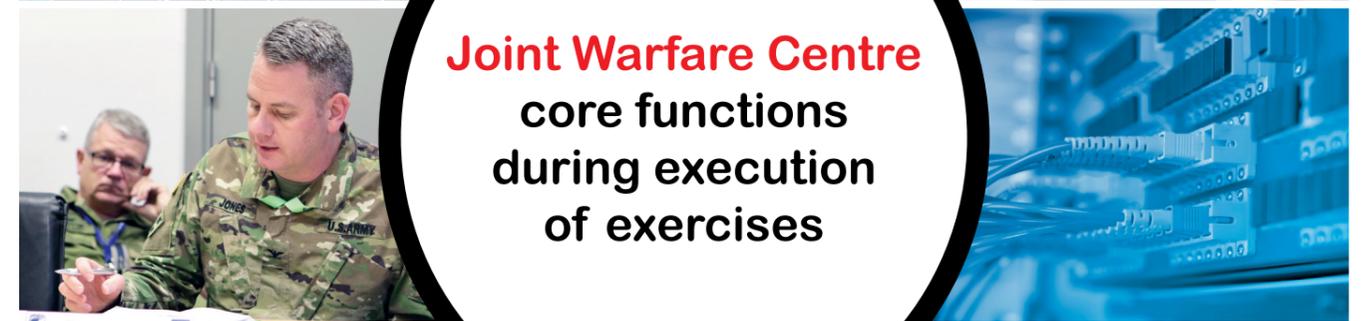
The JWC has a well-trained, experienced organization, which is optimized to deliver NATO's CAX-based exercises at the joint and operational levels. With higher NATO ambitions, the importance of this will grow. The Centre will meet this challenge with dedication and with the clear ambition to deliver what NATO demands. As someone with considerable experience of NATO and NATO exercises recently said: "Being in Stavanger is now more rewarding than ever!" I know that most of us would agree to that statement. †



JWC EXCON members with Major General Andrzej Reudowicz, Commander JWC, at Joint Force Command Brunssum. Photo by JFC Brunssum PAO



**Joint Warfare Centre**  
core functions  
during execution  
of exercises



**JWC Core Functions:** (Clockwise from left) OPFOR (Opposing Forces), White/Grey Cell, HICON (Higher Control), Scenario Development and Management, CIS (Computer and Information Systems), Real Life Support (Facilities, Billeting, Transportation, Messing), Media Simulation, MEL/MIL (Main Events List/Main Incidents List), Exercise Control (EXCON), Training Teams, CAX (Computer Assisted Exercise). Photos by JWC PAO/JFC Brunssum PAO





# TRAINING AND SIMULATION



## THE THREE SWORDS Interview

*Phil Draper, Head of the Computer-Assisted Exercise (CAX) Support Branch since November 2016, discusses JWC's simulation technologies and turning points. "The most challenging warfare scenarios are the ones we are now replicating," he says, "complex, large-scale kinetic operations against a capable opponent with a highly developed and focused doctrine."*

Interviewed by Inci Kucukaksoy, Public Affairs Office, and Lieutenant Colonel Andrew White, British Army, Head CIS Branch, Joint Warfare Centre

**"A good CAX should highlight weaknesses as that is the single best way to identify where, we, as an organization need to improve in our core mission, ensuring the safety of the Alliance and its Members."**

Phil Draper

**Mr Draper, thank you very much for this interview. Considering that all JWC exercises are computer-assisted, can you give us an update on JWC's simulation architecture? What's new?**

— It is my pleasure to talk to you. The major change for this year is our move to a new version of the core simulation system that we use to support exercises here at the JWC. The Joint Theater Level Simulation (JTLS) Version 5 is a radical step forward in capability and allows us to address significantly larger operational domains than in previous iterations.

**As NATO's primary user of CAX support tools and software, what types of technology does the JWC employ?**

— NATO, as a whole, is a major user of Model-

ling and Simulation technology and is continually looking to exploit this key enabling capability, driven by ACT's Transformational activities. What sets the JWC apart is the scale and complexity of the exercises that we execute. The key challenges we face are the requirement to model activity across the complete spectrum of warfare and to present the outcomes of that endeavour directly into the Training Audiences' Command and Control (C2) systems in a seamless and transparent way. If we do our job well, the Training Audience should be unaware that CAX support exists; they should truly train as they fight. To that end, we employ a range of simulation systems and support tools, but our vision is actually to keep the technology as agile and flexible as possible. As my great predecessor, Professor

Erdal Çayırıcı, used to say: "As complex as necessary. As simple as possible."

**Regarding live, virtual and constructive simulation environments, can you tell us where does the JWC stand?**

— The Joint Warfare Centre is tasked with the conduct of joint operational level exercises; and for that reason, our tool set is focused primarily on constructive simulation systems (simulated people operating simulated equipment is one useful definition of constructive tools). This is because constructive simulations lend themselves most readily to representing the manoeuvre of corps-sized land formations, maritime missions consisting of multiple task groups, and air activity measured in the hundreds of sorties per day. However, we also have the capability to produce simulated full motion video using virtual simulation systems (real people using simulated equipment), and the Combined Joint Operations Centre (CJOC) set up during an exercise can also be considered as part of the virtual spectrum as, in this case, the personnel working in the

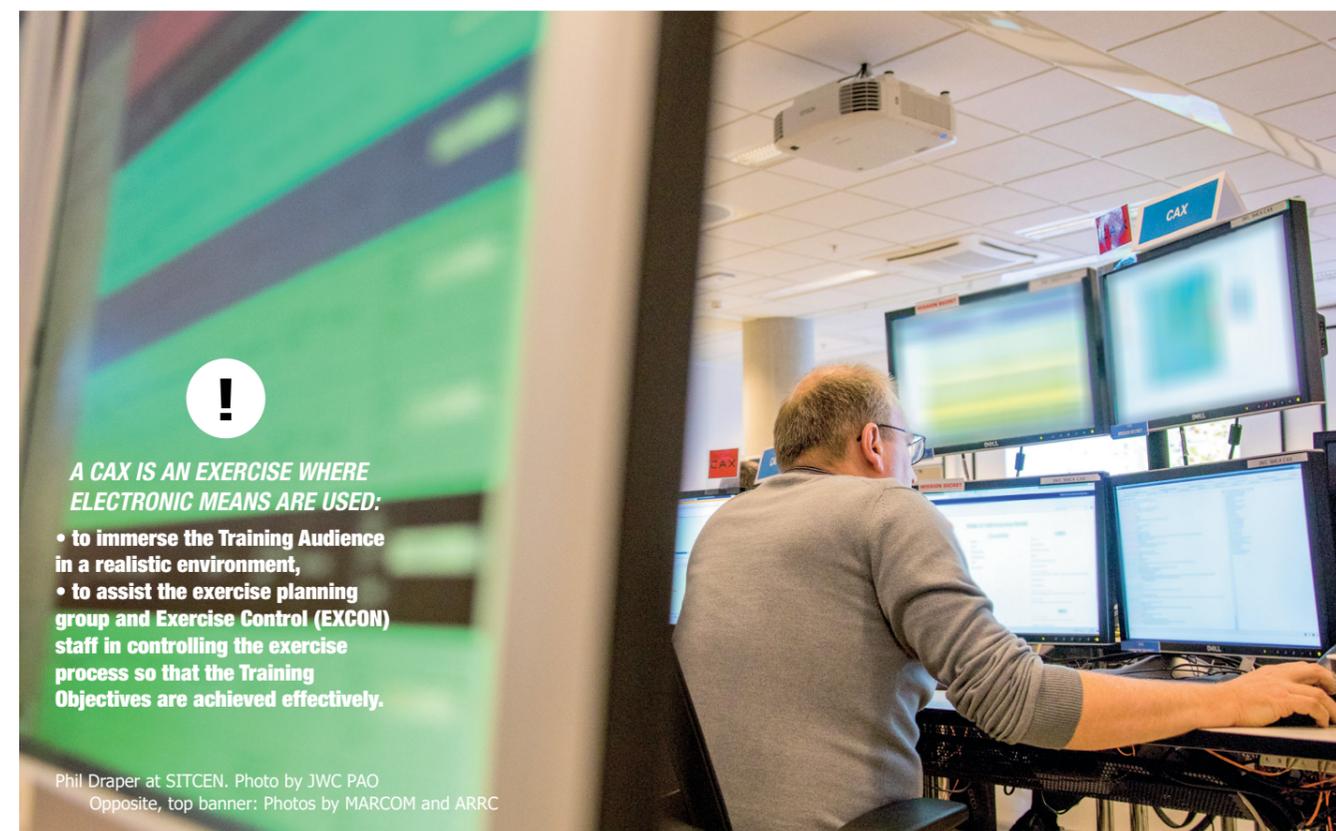
CJOC are operating systems stimulated in part by our simulation architecture.

**CAX is a great training tool, but does it also highlight our weaknesses? What is the greatest area of risk for CAX?**

— Delivering a CAX, or Computer Assisted Exercise, is the mission of the whole of the JWC. CAX Support Branch is charged with providing Modelling and Simulation support to the exercise enterprise. A good CAX should highlight weaknesses, as that is the single best way to identify where, we, as an organization need to improve in our core mission, ensuring the safety of the Alliance and its Members. The greatest risk for the technical element of a CAX is that the benefits of using simulation support are outweighed by the resources required to prepare and deliver that support during exercise execution. We endeavour to ensure that our simulation systems are as current as they can possibly be in terms of fidelity and data accuracy to ensure that we deliver value across all of the domains represented in exercises of the scale and complexity that the JWC provides.

**How does the return of large-scale exercises effect CAX?**

— The major impact on this recent change is on the effort required to build the simulation databases that represent large scale operations conducted at high-intensity and on the number of personnel required to execute them. A secondary effect is the impact on the simulation systems' ability to represent not just operations of this scale, but also high-intensity warfighting across the Joint Operational Area (JOA). This places even more emphasis on the requirement for us to get our parametric performance data for weapon systems correct, but also to understand how changes in doctrine and the operational art can be accurately represented in a synthetic environment. We have many challenges to face, but that is what makes this a fascinating time to working in this field for NATO. For example, the virtual battlespace for TRIDENT JAVELIN was very complex. We built five corps down to battalion level and the scenario called for hundreds of ships and aircraft to all be operating in the battlespace at the same time. It was extremely challenging from



**A CAX IS AN EXERCISE WHERE ELECTRONIC MEANS ARE USED:**

- to immerse the Training Audience in a realistic environment,
- to assist the exercise planning group and Exercise Control (EXCON) staff in controlling the exercise process so that the Training Objectives are achieved effectively.

Phil Draper at SITCEN. Photo by JWC PAO  
Opposite, top banner: Photos by MARCOM and ARRC





Phil Draper during a briefing. Photo by JWC PAO

than me. However, as an operational analyst by background, I can say that history holds many lessons. In that regard, I would say be careful in predicting the next conflict, it will not be the one you expect. Assume that your opponent is capable, determined, prepared and effectively equipped. That assumption leads to better training and helps avoid the pitfall of underestimating the enemy. From a simulation perspective, we try to build these capabilities into the OPFOR Order of Battle, even if that sometimes leads to criticism that the enemy is too capable. Better to have a capable simulated enemy where the only casualties are virtual, then an unrealistically weak opponent that may lead to negative training.

**In your opinion, what would be the most challenging warfare scenario to replicate in a synthetic environment?**

— Probably the ones we are now replicating! Complex, large-scale kinetic operations against a capable opponent with a highly developed and focused doctrine. We have much to learn in order to do this better, and simulations need to be enhanced to better reflect the complexity and depth of the emerging future battlespace, but we are in an excellent position to make the required developments.

**Computer Assisted Exercises are cost-efficient. But, are they realistic enough?**

— Computer Assisted Exercises have their

a simulation perspective as well as from the manning and management side. We learned a huge amount about our strengths and weaknesses and that can only prepare us better for the challenges to come. It took nearly two years to plan and prepare for this exercise because of the scale of the databases that were needed, but also because of the additional planning burden related to the size of the exercise environment. Ivan Vianello and Luca Sacco from the CAX Support Branch led the planning and execu-

tion of this exercise, and they did a fantastic job, but it required the whole Branch to come together to prepare and deliver the training effect required. I am enormously proud and privileged to be part of this team.

**You talked about the operational art and warfare. How can we be sure to best prepare NATO for the future?**

— I am not a military expert, so there are much better qualified people to answer that question

address in an actual real-world operation. It is also possible to script new material during the execution phase of the exercise depending on how the exercise evolves and how TA performs. This approach, which allows adaptation of MEL/MIL during execution, is termed Dynamic Scripting. Dynamic Scripting is challenging and requires rapid production of material in a controlled environment. Scripting is supported by a range of simulation tools, and it is essential that these two exercise components work seamlessly together to support training delivery. Simulation is used to regulate and determine the location, status and condition of all the military and civil entities and systems deployed in the synthetic exercise environment.

Simulation is also used to maintain a consistent white truth of the operational area at any point in time, and to portray a sided intelligence view of the battlespace, which is dependent on the side's intelligence and sensing assets and efforts. Through mediation tools, the simulated environment is fed to the TA Command and Control (C2) systems, so that TA perceives the operational environment through their own native planning and execution environment, ensuring that they train as they fight. Hence MEL/MIL designs the flow of an exercise, which is implemented and supported by simulations in a JWC delivered Computer Assisted Exercise (CAX). MEL/MIL and simulation tools are components characteristic of a CAX."

**“Better to have a capable simulated enemy where the only casualties are virtual, then an unrealistically weak opponent that may lead to negative training.”**

place in the continuity of training required to prepare forces for the full range of mission types they may encounter. Even a simulation professional must concede that while CAXs are a key component in training they are but



CAX replicates the Training Audience's subordinate units on the ground, in the air and on the sea. RIGHT: The JTLS viewer, which projects the map on the left.

one tool in the range available. The JWC has a particular mission, which is to help prepare the NATO Command and Force Structure headquarters for their role. The CAX approach developed at the JWC is particularly targeted on the pursuit of that goal.

**What are some of the most exciting developments in virtual/simulation technologies in the world right now? When can we expect to see them at the JWC?**

— Much of the development in Modelling and Simulation has focused on the tactical domain in recent years, which is understandable given recent history and a focus globally on counter-insurgency type operations. I would expect recent global political developments to refocus emphasis on large-scale constructive technologies. Therefore, I think, within the next five years we will begin to see interesting opportunities related to improvements in the domains of big data, Modelling and Simulation as a service, and enhanced representation of the information domain.

**The JWC is not just a training centre; it is also a warfare centre. How about a name change: Joint Warfare and Simulation Centre? Would you agree?**

— Hah! No, tempting though it is to elevate the importance of one's own area, I think the JWC's strength is in its "One Team" approach. It is not just CAX Support Branch and simulation that makes the JWC a warfare centre, but the combination of all domains, the Main Events List/Main Incidents List (MEL/MIL)



Ivan Vianello

from the Content Branch, enemy capabilities from the OPFOR Branch, Media Simulation, Experimentation... and the list goes on. The expertise that resides across the JWC personnel is extremely impressive and the ability to find warfare related support in-house is one of the real pleasures about working here. I think we should stick with the name Joint Warfare Centre, and continually strive to add more warfare related activity into all we do professionally.

**According to a recent article, to test the skills of any technical expert in the world of Information Technology (IT), the ultimate question to ask is: Star Wars or Star Trek?**

— At the risk of appearing picky, I don't work in IT. It is a common misconception, but CAX Support is much more to do with operational research and Modelling and Simulation skills than it is to do with IT. We use IT in much the same way as all specialists at JWC do—as an enabling technology to deliver effect. Besides both of the choices provided are clearly inferior to *Dr Who*. ✦



ABOVE: Dr Who changed the world for the better, therefore justified the praise. Photo by Shutterstock

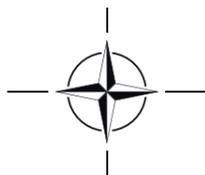


**NEED TO KNOW**  
The extract below was originally published in The Three Swords Magazine, Issue No. 23. By Andrzej Wnuk, JWC Modelling and Simulation Engineer



"... [The] scripted material, called Main Events List/Main Incidents List (MEL/MIL), focuses on Exercise and Training Objectives identified during exercise design. MEL/MIL is intended to stimulate the Training Audience (TA) with a series of challenges that they would need to





Excerpts from the press conference by NATO Secretary General Jens Stoltenberg, 14 February 2018.



## NATO Announces Major Changes to its Military Command Structure

“At the end of the Cold War, NATO had 22,000 staff working in 33 commands. Today, the command structure is reduced to fewer than 7,000 staff in seven commands. But, the security environment in Europe has changed [four years ago], and so NATO is responding.

“Last November, Defence Ministers agreed in principle to the design for an adapted NATO Command Structure. It will place greater focus on maritime security, logistics and military mobility, and cyber defence. And today, we decided on the key elements of the new NATO Command Structure:

- We will establish a new Joint Force Command for the Atlantic. To help protect sea lines of communication between North America and Europe;

- We will establish a new Support Command for logistics, reinforcement and military mobility. Improving the movement of troops and equipment is essential to our collective deterrence and defence;
- We will designate some additional land component commands in Europe in order to further improve coordination and rapid response for our forces;
- We will also set up a new Cyber Operations Centre at our military headquarters in SHAPE, to further strengthen our defences.

In June, Defence Ministers will decide on timelines, the locations of our new commands and the increased staff levels that will be required.”

For full text, please visit [www.nato.int](http://www.nato.int)

### The five themes of the Brussels Summit:

- 1/ Further strengthening NATO's deterrence and defence;
- 2/ Countering terrorism: Stepping up efforts to project stability in our neighbourhood, including the fight against terrorism;
- 3/ Making the partnership between NATO and the European Union even stronger;
- 4/ Continuous modernization: Modernization of the Alliance to underpin our policies, processes and our use of resources;
- 5/ Ensuring fairer burden sharing: Investing additional funding in key military capabilities.

### Adaptation, Coherence and Cooperation

Increased focus on maritime, logistics and movement, situational awareness, and cyber defence



Photo by CPO Fran C. Valverde (MARCOM)



## NEW DOCTRINAL CONCEPTS

# BIOMETRICS

by WING COMMANDER MARK LUNAN  
Royal Air Force  
Subject Matter Expert and Observer/Trainer  
Joint Warfare Centre

with additional contributions from  
Lieutenant Colonel Joel Moore, HQ SHAPE  
Lieutenant Colonel John Moore, JWC  
Major Wilko ter Horst, HQ SHAPE

### OXFORD ENGLISH DICTIONARY DEFINITION

Relating to or involving the application of statistical analysis to biological data. Also known as Biometry and Biostatistics in North American English.

### NATO DEFINITION

The automated recognition of individuals based on their behavioral and biological characteristics.

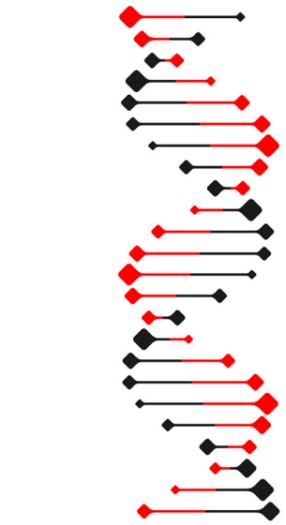
### JOINT DEFINITION

The process of recognizing an individual based on measurable anatomical, physiological and behavioral characteristics. The U.S. places biometrics in the category of “Identity Intelligence (I2)” and is now a discrete category of intelligence products.<sup>1</sup>

### SO WHAT FOR NATO

Biometrics is a capability that, together with intelligence, supports the identification of threats to NATO and assists in counter-threat operations conducted by NATO assets.





In 2012, NATO Nations unanimously adopted the “Concept of Biometrics in Support of Operations” which highlights the broad cooperation required across the full spectrum of military and civilian entities for biometrics to take effect against threat anonymity. The practical use of biometrics in NATO operations first took place in Afghanistan.<sup>2</sup>

ABOVE: Flowers posed in the impact of a Kalashnikov bullet in the bar hotel Le Carillon near the Bataclan theater after the terrorist attack in Paris, 13 November 2015. Photo by Frederic Legrand, Shutterstock

**DOCUMENTARY SOURCES**

Allied Intelligence Publication (AIntP) 15 (Countering Threat Anonymity: Biometrics In Support of Operations and Intelligence); NATO Concept for Biometrics in Support of Operations, 21 March 2012; U.S. Army, Joint Publication 2.0, “Joint Intelligence”, 2013.

NATO’s New Strategic Concept, and the 2014 Wales Summit Declaration identified an increase of that threat posed to the Alliance by individuals and non-state actors, who will act under the protection of anonymity to gain tactical, operational and strategic advantages. Among these increasing threat categories are terrorists<sup>3</sup>, traffickers, foreign fighters, insurgents, hackers and pirates. These actors will seek to remain anonymous and conceal their activities when encountered by NATO forces. The need to identify such actors and mitigate their ability to remain anonymous is currently high on NATO’s agenda, and to this end biometrics is considered one of NATO’s top strategic and operational capabilities.

The quality of Biometrics Support to Operations is directly proportional to the size of its database used to remove the anonymity. Therefore, NATO Automated Biometric Identification System (NABIS) was created to provide functionality to store biometrics data and facilitate multimodal biometrics searches. NABIS stimulates sharing of biometrics among the [NATO] nations in a controlled environment. It also provides the ability to create a repository to store biometric data for immediate verification that is available for NATO forces in a Joint Operations Area (JOA). In the context of NATO operations today, when NABIS becomes fully operational, it will give

commanders the ability to more quickly and accurately discover, identify, and record the identities of threat actors. It will also enhance Command and Control (C2) by allowing commanders to be automatically informed of who is encountered by whom, where, and at what time. This, in turn, will support actionable intelligence at the operational (NATO Response Force (NRF)) and strategic (national agencies) levels.<sup>4</sup>

A biometric characteristic is a biological and behavioral signature of a person from which distinguishing, repeatable features can be extracted for the purpose of recognition. Each characteristic has a distinct set of advantages and disadvantages for use in support of military operations. Lessons Learned and Identified by best practices in ISAF by NATO Nations consistently highlighted that collection of certain human characteristics was essential,<sup>5</sup> which are:

- **Topography:** Face, finger and hand.
- **Structure:** Iris, DNA<sup>6</sup> and hand-vein.
- **Dynamics:** Hand-writing, voice and keystroke.
- **Gait**<sup>7</sup>

Using biometrics as a means of identifying individuals within the operational environment presents distinct advantages over the traditional methods of using text-based identification processes. These advantages are as follows:

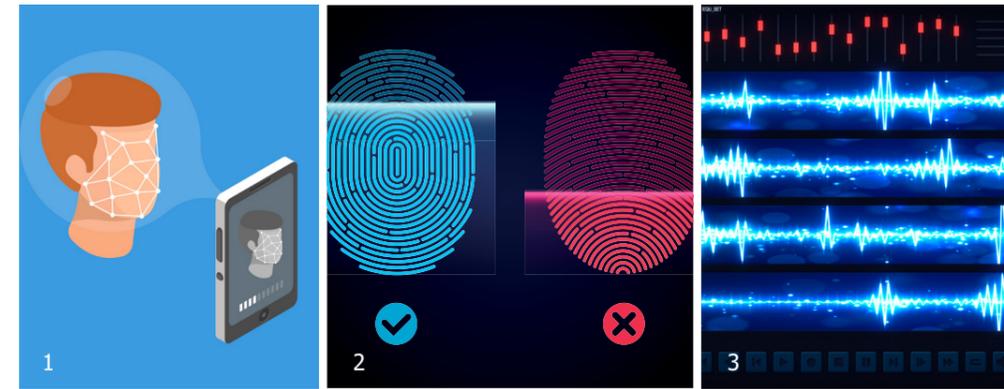
- **Scientific Accuracy:** Includes beyond reasonable doubt.

- **Real-Time Automation:** Enables quicker analytical turnaround time.
- **Technical Exploitation:** Links individuals to items recovered during operations.
- **Biometrically Enabled Watch Lists:** Force multiplier for commanders.<sup>8</sup>

Following best practice from Lessons Learned in Afghanistan, biometrics assisted NATO using the “F4” principles below:

- **Find:** Systematically captured and matched biometric samples from individuals in the battlespace as well as from improvised explosive devices (IEDs), weapons’ caches, computers, mobile phones, documents and other sources. This in turn identified and linked anonymous persons to networks, places, items, and events.
- **Fix:** Allows NATO to positively identify (PID) the targets of operations more accurately, which increases fidelity in targeting.
- **Finish:** Biometrics allows the use of a Biometrics Enabled Watch List (BEWL), which allows the NATO commanders to provide specific guidance to operational as well as tactical elements on how to address specific individuals encountered during operations.<sup>9</sup>
- **Force Multiplier:** Biometric samples, captured across the comprehensive spectrum can be automatically matched, which empowers C2, force protection, counter-intelligence and targeting efforts. The additional use of BEWLs creates opportunities within operations to find, fix and finish threats.<sup>10</sup>

The interdependent purpose of NATO biometrics for capturing and using biometric data in support of NATO operations is the identification of threat actors. This is accomplished by one foundation (Enrolment), and two primary (Identification and Verification) biometric functions.<sup>11</sup> **Biometric Enrolment** is the act of creating and storing a biometric data record. It can be used to biometrically link an event record to an individual. Biometric Enrolment also takes place when a latent biometric sample is digitized for matching against a biometric database. Latent biometric samples are developed through technical exploitation and subsequent forensic processes, which are used to recover latent fingerprints or DNA



ABOVE: “Topography” collection examples. A smartphone scans a person’s face for facial recognition (1), fingerprint capture to analyze fingerprint data (2), “Dynamics” collection example of voice sampling (3).

from items.<sup>12</sup> **Biometric Identification** is the process when a biometric sample is compared against all records in a biometric repository or system of repositories to find and return the biometric reference identifier(s) attributable to an individual. It is used to associate that individual with previously collected biographic and situational information. Its primary focus is to identify anonymous threat persons.<sup>13</sup> Biometric records can originate through inter-agency sharing or from military activities. Sharing can originate from historic datasets provided by Allied, host, or Partner Nations. Biometric Enrolment records from a variety of military activities can be simultaneously checked against the database for Biometric Identification, while adding additional enrolment records to the database.<sup>14</sup>

**Biometric Verification**, meanwhile, is a one-to-one process in which an individual’s biometric sample is matched against his stored biometric file. It is often used in processes associated with ID cards and is used to control access to bases, areas, facilities, assets, and events. Biometric Verification, supported by biometric Identification, is vital in detecting insider threat and preventing green on blue attacks.<sup>15</sup>

A NATO or Partner Nation’s use of biometrics may be permitted or constrained by national laws and international agreements to which they are a party. These factors vary from one nation to another and these variances impact on how each nation might participate in NATO biometric activities. As such, the NATO Biometric Framework and Cycle was created to promote an interoperable and collaborative NATO standard.<sup>16</sup> The NATO Biometric Framework and Cycle sets a base-

line of technical interoperability standards, concepts for national control<sup>17</sup> and processes for assessing and protecting privacy and data security; all of which underpins planning and evaluation. Here is an explanation of some of the abbreviations:

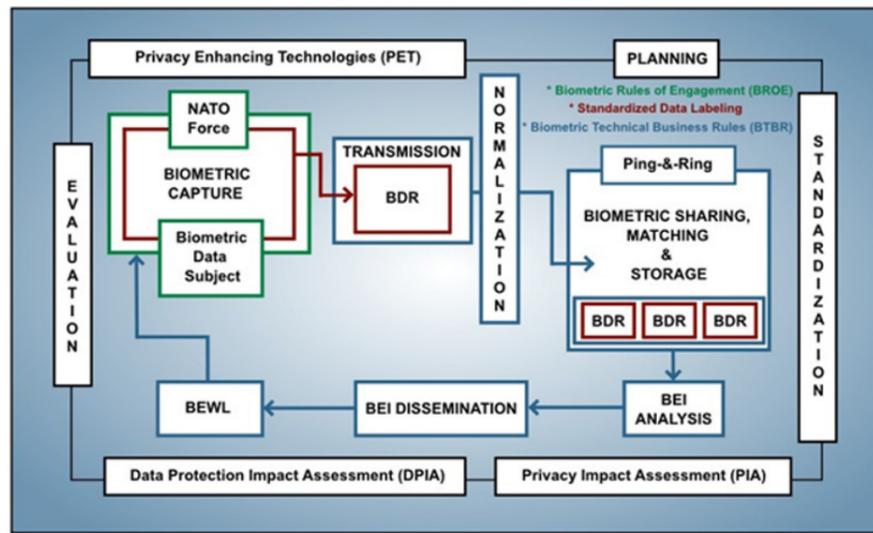
**BDR:** The Biometric Data Record contains those human characteristics of an individual listed above (Topography, Structure, Dynamics, Gait).<sup>18</sup>

**BDS:** A Biometric Data Subject is an individual person. This can be a volunteer, such as a locally employed civilian working inside a NATO deployed base or a threat individual/person of interest. A factor in determining the capture and use of biometric data is whether its capture is consensual or non-consensual. In certain instances, Biometric Series Rules of Engagement and national caveats may determine whether or not consent is required.<sup>19</sup>

**BEI:** Biometric Enrolled Identification is the intelligence resulting from the capture, processing, analysis, interpretation and dissemination of biometric data, the contextual information associated with that data and other associated information and intelligence. It aims to integrate the information from biometric capture and processing into all-source intelligence analysis.

**BEWL:** Biometric Enabled Watch List is an intelligence product, which assesses and categorizes biometrically identified individuals. The BEWL is key to the dissemination of biometric information throughout NATO commands.<sup>20</sup>





ABOVE: NATO Biometric Framework and Cycle.

**BTBR:** Biometric Technical Business Rules is a set of rules in a system developed to automate the requirements of sharing arrangements.

**“Ping and Ring”:** A slang term for NATO and national inter-agency coordination, cooperation and biometrics information exchange.<sup>21</sup> This term is also extended to the biometrics user community at the operational and tactical levels within a JOA. A typical Ping and Ring graphic is depicted below, which highlights information sharing between two nations resulting in a **Multi-Biometric Match Report (MBMR)**. MBMRs contain biometric encounters by multiple NATO nations, and as such, each of those nations potentially has valuable information regarding the individual. The nation that last encounters an individual is the necessary customer of information and intelligence regarding that individual. This is known as the **Principle of Last Encounter**.<sup>22</sup>

**Legal Concerns:** The main legal issues in biometrics involve the sharing of identity intelligence activities, data and techniques between the NATO Nations. Concept Papers and reports of Biometrics Working Groups generally state that biometric information is Personally Identifiable Information (PII) that must be handled “in accordance with the applicable national laws of the collecting nation.”<sup>23</sup>

In the near future, *The Three Swords Magazine* expects to feature an article explain-

ing the legal aspects of biometrics in detail.

**So what for NATO**

Within the context of the NRF operations, here are two examples of Biometrics Support:

**1/ Inter-Agency Cooperation:** The NRF is supporting a foreign nation’s re-building process, which is being undermined by arms smuggling into that state. All biometric operations are conducted using ABIS.<sup>24</sup> A civilian truck driver provides biometric samples to the nations’ border police, who are supported by the

NRF elements. The biometric samples and contextual information are transmitted to the JOA ABIS, and subsequently compared to the locally stored biometric files. The truck driver’s biometric data does not match any file in the JOA ABIS, and a negative response is provided back to the border police. The truck driver is also checked against local and national criminal records. The border police review the match result and clear the truck driver to continue.

The biometric file is enrolled and stored in the JOA ABIS, and is then shared with other agencies (where information sharing agreements are already in force). Two weeks later, the host nation’s national police, supported by the NRF, conduct a raid on the arms-smuggler’s safe house and seize numerous documents and computer hardware. Biometric samples are collected from this evidence, and compared to the JOA ABIS. A match is made between the latent samples collected during the raid and the truck driver’s biometric file. An analysis of the data collected from the raid and associated information is completed and the truck driver’s non-biometric reference information is updated with these new samples, red-flagged for future matches, placed on the JOA BEWL and shared with all biometric system operators within the country.

Several days later, the truck driver attempts to cross into the host nation at a different border checkpoint. He submits his individual identification and a biometric sample for verification. The sample is com-



ABOVE: Iris scanning during a biometrics course at the Joint Readiness Training Center. “Biometrics is the science of using physiological features, such as fingerprints or irises, as a method of identification,” said the class instructor, adding: “The good thing about using biometrics is that it’s real time. That means if you’re scanning someone, it will give you an answer within a couple seconds.” Photo by Pvt. Luke Rollins, U.S. Army. ([https://www.army.mil/article/23942/fort\\_lewis\\_soldiers\\_learn\\_about\\_biometrics\\_at\\_jrtc](https://www.army.mil/article/23942/fort_lewis_soldiers_learn_about_biometrics_at_jrtc))

pared against the JOA BEWL, which alerts the border police to the red flag stored in the JOA ABIS. The truck driver is detained for questioning and his biometric file is updated with the newly collected biometric sample and contextual data.

**2/ Humanitarian Assistance Relief:**

The NRF is responding as part of an international disaster relief effort. Thousands of injured are being treated and awaiting further treatment as soon as field medical hospitals are assembled and operational. All individuals who receive medical attention within the disaster area are immediately enrolled in a NATO biometric local ABIS that has been established for management of the Internally Displaced Persons (IDPs). All treatment records are linked to their respective biometric files. Many of the injured, after being initially treated, voluntarily relocate within the disaster area. However, this movement is making it difficult for medical personnel to efficiently provide medical services or track patients for follow-up treatment.

The NRF medical personnel are performing triage for IDPs arriving by buses at

one of the newly established field hospitals. They collect biometric samples from each IDP for identification purposes as part of the initial medical assessment process. The biometric files are then sent for matching against the local ABIS to assist with the identification of the individual and retrieve any available medical treatment history. An IDP who cannot be matched against the local ABIS is enrolled as a new biometric file. All subsequent medical treatment will later be linked to that file.

When an IDP is positively matched against the local ABIS, links to his/her medical history are accessed and any prior treatment records are retrieved. Subsequent treatment is updated in the IDPs medical record so that information can be accessed by others again in the future by using the established net-centric links between the non-biometric repository (medical files) and his/her biometric file. The NRF medical personnel use these medical records to aid in triage.

Biometrics is used the world over by everyone, not just NATO, including humanitarian relief organizations or law enforcement agencies. From the moment you apply for a driving license or passport perhaps, you are “in the system”—therefore biometrics is nothing new.

Within the NATO context, biometrics has proven to be a significant theatre-level force multiplier in supporting a host nation in their fight against organized crime and terrorism and in humanitarian relief. Af-

ghanistan was a typical example of how the International Security Assistance Force (ISAF) was able to do this. Future NRF operations are highly likely to use biometrics, dependent upon the mission, legal considerations and, of course, constraints or restraints stipulated by the relevant host nation. ✦



**BIOMETRICS IS REAL TIME**

**END NOTES:**

- 1 U.S. Army, Joint Publication 2.0, “Joint Intelligence” (2013).
- 2 International Security Assistance Force (ISAF) used biometrics across Afghanistan 2010-2014.
- 3 Some NATO Nations do not regard counter-terrorism as a military function; however, intelligence collected in military operations can be essential to national operations.
- 4 Allied Intelligence Publication 15, “Countering Threat Anonymity: Biometrics in Support of NATO Operations and Intelligence (NATO Standardization Office 2016) [hereinafter AInt-15].
- 5 Id.
- 6 Deoxyribonucleic Acid.
- 7 AInt-15, F-5: “a biometric characteristic based on walking pattern”.
- 8 AInt-15
- 9 AInt-15
- 10 Id.
- 11 Id.
- 12 Id.
- 13 Id.
- 14 Id.
- 15 Id.
- 16 Id.
- 17 NATO can only suggest or recommend to nations on matters of national control.
- 18 AInt-15
- 19 Id.
- 20 Id.
- 21 Subject to national caveats and NATO constraints and restraints.
- 22 AInt-15
- 23 NATO & Int’l Military Staff, Concept for Identity Intelligence (I2) (2017).
- 24 Automated Biometric Identification System.



Photo by vlad93, Shutterstock





*"The approach is guerrilla, and waged on all fronts with a range of actors and tools—for example, hackers, media, businessmen, leaks and, yes, fake news, as well as conventional and asymmetric military means. Thanks to the internet and social media, the kinds of operations Soviet PSYOPS teams once could only fantasize about, upending the domestic affairs of nations with information alone, are now plausible."*

**Molly K. McKew**  
Politico Magazine, September/October 2017

by HOPE CARR  
Information Environment and  
Information Warfare Training Specialist

## THE POWER OF NON-ATTRIBUTION IN MODERN INFORMATION WARFARE

# FIGHTING GHOSTS

**R**etrace your steps since you woke up this morning. What was the moment that the external world began to influence your perception? When was it that you reached into the cyber domain to inform your day? For me, it was 5:15 a.m. I woke up at 5:00 a.m. and was sitting with my smartphone looking at the top morning headlines just 15 minutes later. Some of you may make it a little bit longer than I did, but I would guess the majority are flipping through feeds, websites, social media and all of the comments that accompany them within a few hours of getting out of bed. Further, when we make it to where we are around actual people, we quickly fall into the habit of talking and discussing things we have read, heard or saw. Those topics with the most likes, shares or comments are often driven to the top of the feeds, websites and social media platforms that we go to, and as a result, are often the shared topics we discuss throughout the day. All of this is shaping the way we perceive events, ideas and the world around us.

While this is not so different from before when we relied on more traditional mediums like radio, newspapers and television, the speed, amount of content, and the deliverers of information are. We have all seen it happen. A rumour grows into comments, then into a trending topic, then branches out into articles, TV and radio, often without a single idea of where it sprouted from or why. In an attempt to just keep up with all of the information out there, the questions of *WHO* and *WHY* often get pushed to the back burner and the power of

volume becomes the validator for authenticity and trustworthiness. But, the *WHO* and *WHY* are the critical questions everyone should be asking in today's information saturated world.

### Information environment and modern warfare

This pattern is not just limited to our social lives or our morning headlines. Today, the influence of information and attribution has pushed into diplomacy, politics and military operations. If you Google® "information and warfare", it brings up over 138 million hits in just .62 seconds. This number is expected to grow as the concept of information warfare, "fake news" and "alternative facts" becomes even more entrenched in our daily lexicon.

While the role of information warfare has long been discussed within military organisations, the public consumption of the concept truly began following Russia's November 2014 occupation of Crimea under the guise of "little green men" that allowed Russia to hide in plain sight. As one Guardian article described, after the occupation, "Crimea, a peninsula with many ethnic Russians, is suddenly full of Russian plated-trucks and aircraft, and its parliament and airport seized by men carrying Russian guns, denying that they are Russian."<sup>1</sup>

Crucial to this approach was Russia's absolute saturation of the information environment with its own version of reality around Crimea. A 2015 analysis of Russia's information campaign against Ukraine by NATO's Strategic Communications (StratCom) Centre of Excellence (CoE) suggests that "the information campaign and related

military action by Russia corresponds to the characteristics of a new form of warfare where the lines between peace and war, foreign military force, and local self-defence groups are blurred and the main battlespace has moved from physical ground to the hearts and minds of the populations in question."<sup>2</sup>

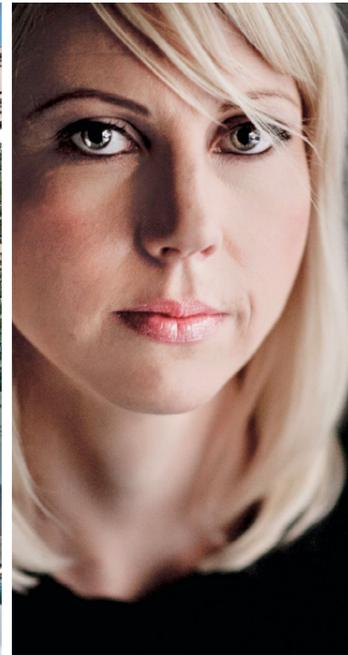
The study identified deception as a critical component of the Russian information warfare strategy "to distract and delay". The CoE stressed that "investigating and disproving the false information, different versions of events and even conspiracy theories rapidly disseminated by Russia requires a lot of time, effort and resources on the part of international organisations like NATO, the Ukrainian government, independent media, experts and even ordinary citizens."<sup>3</sup>

At the heart of this disinformation campaign is the de-centralized distributor. As stated in General Valery Gerasimov, Russia's Chief of the General Staff, published 2013 article, *The Value of Science Is In The Foresight*,<sup>4</sup> chaos is the strategy of choice. As Molly McKew summarizes in her September 2017 article on the Gerasimov doctrine for Politico Magazine, "Russian intervention is systematic and multi-layered (...) like all guerrilla doctrine, it prioritizes conservation of resources and de-centralization, which makes it harder to detect and follow."<sup>5</sup>

### Non-attribution

Non-attribution is a critical piece of the decentralized component of Gerasimov doctrine. Dr Andrew Monaghan, a Senior Research Fellow at Chatham House and a Visiting Fellow at the Changing Character of





ABOVE: Chief of the Russian General Staff, General Valery Gerasimov. In the hierarchy of the Russian government, there are uniformed officers serving in positions technically above the Chief of the General Staff, but arguably none of these assignments are as prestigious. Photo by Free Wind, Shutterstock. MIDDLE: The now-defunct Internet Research Agency in St. Petersburg, which was, in fact, a Russian troll factory, with hundreds of workers trained to pump out misinformation online. Photo by NBC News © www.nbcnews.com RIGHT: Journalist Jessikka Aro, who became a target for pro-Russia propaganda (<http://kioski.yle.fi/>). Photo by @jessikkaaro

War Programme, Pembroke College, Oxford, suggests that Russian hybrid warfare “relies on proxies and surrogates to prevent attribution and intent, and to maximize confusion and uncertainty.” Conventional force for Russia is seen as supplementary.<sup>6</sup> The InfoSec Institute validates Monaghan’s comments calling attribution “a multi-dimensional issue.” The Institute suggests attributing content to non-nation-state actors from governments requires multiple source analysis of information, which includes “forensic analysis, human intelligence reports, signals intelligence, history, and geopolitics”; but cautions that “the problem of attribution is exceedingly complex and is not always solvable.”<sup>7</sup>

**Troll armies, fake stories and corrupt validators**

While hackers pose a significant state cyber threat, the greater and less attributable threat may be the ever-expanding troll armies that can flood the online world. These armies, made up of both real people and electronic BOTs, have the power to influence and shape opinions and ideas as we pour over the headlines during our early morning coffees, or

read the comments on our morning commute. As Leo Benedicus, an award winner feature writer for the Guardian outlined in his 2016 article *Invasion of the Troll Armies*, “we don’t know who they are, or what their mission is. We only know that there are thousands of them out there, pretending to be us.”<sup>8</sup>

As the profile of information warfare grows, the public is gaining glimpses into these troll armies. A series of leaks in 2013 and 2014 about Internet Research Agency (IRA) exposed the St. Petersburg based company as a government funded troll army trained and paid to smear Russian opponents. According to documents released by hackers, IRA employed more than 600 people across Russia with an annual budget of \$10–\$12 million. More than half of the budget was paid out in cash to employees who were expected to post or comment on news articles at least 50 times a day. The documents showed employees with blogs had to maintain six Facebook accounts and publish at least three posts daily or on Twitter, they had to have at least 10 accounts with at least 50 tweets per day. Employees also had targets for both followers and the level of engagement that had to be reached.<sup>9</sup>

In October 2017, CNN broke that IRA,

also blamed for interference in the 2017 U.S. elections, was linked to Russian Oligarch Yevgeny Prigozhin a member of Putin’s inner circle.<sup>10</sup> IRA has since been shut down.

In another example, New York Times reporter Andrew Higgins outlined the plight of Finnish journalist Jessikka Aro after she tried to expose Russia’s troll armies. Aro, a journalist for Finland’s national broadcaster, became a personal target for a smear campaign, with the group going so far as to hold a protest against her at the headquarters of Yle Kioski. On the surface this seems small, but the greater impact and purpose goes far beyond attacks on Aro.

Public opinion in Finland is presently deeply divided over Russia, making the nation a target for information warfare. Saara Jantunen, a researcher at the Finnish Defense Forces in Helsinki, says Russia’s big concern is to keep Finland out of NATO. To do so, Jantunen says they “fill the information space with so much abuse and conspiracy talk that even sane people start to lose their minds.”<sup>11</sup>

Add to this saturation the validation of ideas and narratives by what appear to be credible third parties and the confusion for the consumer only grows. As people become more information savvy, they are doing the second

**While hackers pose a significant state cyber threat, the greater and less attributable threat may be the ever-expanding troll armies that can flood the online world.**

checks to make sure they are not being tricked or influenced but it is not always easy to know what agencies and people are legitimate.

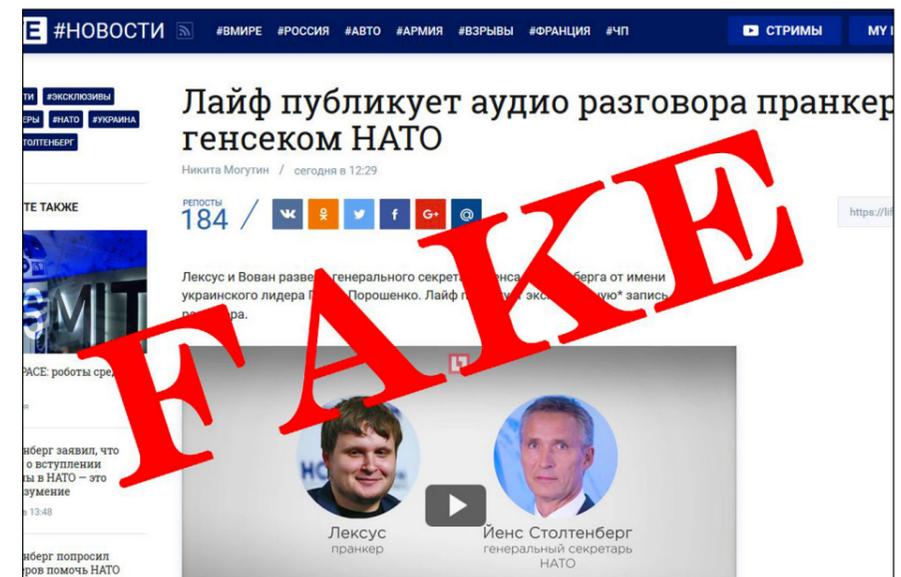
Russian funded non-governmental organizations (NGOs) like the European Research Institute, and think tanks like Global Research in Canada, present doctors, studies and research that are often used to validate Russian narratives, originally driven by trolls and BOTs, once they make it into mainstream media.<sup>12</sup> Linking these organizations and sources to legitimate means of validation means most people are more likely to buy in to the narratives once validated through these third party agencies, which often act as sense-making tools when topics are complex and complicated. Underestimating the power

of these tools is what nations like Russia want because the accumulative effect of the comments, shares, likes and saturation of government funded narratives achieved by these troll armies and paid validators shape international opinion and ensure ongoing disruptions and public unrest. The last few years has shown no nation, not even those we once saw as superpowers, are immune from the influence of troll armies and their ability to undermine confidence in once immune institutional safe havens.

**We no longer fight soldier-to-soldier**

The looming question is “so what” for modern military operations. If we think traditionally about warfare, it would seem that thousands of troll armies in front of laptop or think tanks, NGOs or BOTs will have little effect on the battlefield. But, modern concepts of the battlespace that no longer function within a singular kinetic environment<sup>13</sup> tell a far different story. One that is much closer to that predicted by Marshall McLuhan, the Canadian Godfather of media theory, in his 1970’s book *Culture Is Our Business*. McLuhan predicted “World War III [will be] a guerrilla information war with no division between military and civilian participation.”<sup>14</sup>

BELOW: The screenshot of the Twitter page of NATO Principal Spokesperson Oana Lungescu countering disinformation in the Russian media and social media space, 3 February 2017. Her message read: “#Russian audio of an alleged call btwn @NATO SG @jensstoltenberg & President @poroshenko is a fake. No such call took place.”



The Russian-Finnish border zone. Photo © Thomas Nilsen

**Recommended Reading LESSONS FROM FINLAND**

The introduction below is extracted from Dr Katri Pynnöniemi’s article, “Hybrid Influence, Lessons from Finland”, NATO Review Magazine (2017), [www.nato.int](http://www.nato.int)

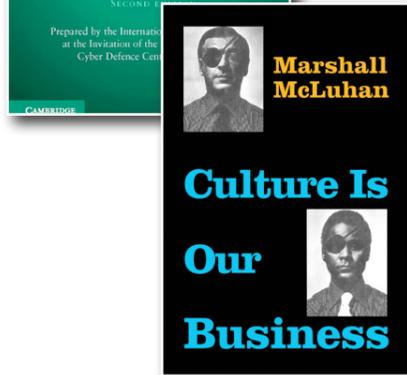
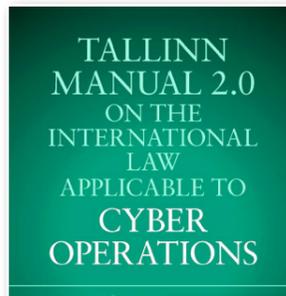
“THE ROOTS OF RUSSIA’S hybrid methods go back to the Soviet era, although the label is more recent. Active Measures, as hybrid was called back then—such as spreading disinformation and setting up front organisations in the West—was an integral part of Soviet foreign policy. Today, some of Russia’s tactics are surprisingly similar, but the current information environment makes their use both more efficient and complex.

“As Finland has learned, hostile influence does not always involve pressure tools and ‘sticks’ but also kind words and ‘carrots’. Whether attempts to influence and control the target state are reflexive or coercive depends on the context—but the aims and effects could be similar. Russia’s official rhetoric, for instance, offers positive messages of good neighbourly relations, yet on the sidelines, Finland receives reminders that this is not self-evident and that, to maintain good relations, it should behave ‘responsibly’ (that is, in a way that would not endanger Russia’s interests).”

The online article can be found at [www.nato.int/docu/review/2017/Also-in-2017/lessons-from-finland-influence-russia-policy-security/EN/index.htm](http://www.nato.int/docu/review/2017/Also-in-2017/lessons-from-finland-influence-russia-policy-security/EN/index.htm)

While time and space have changed the language, Gerasimov expands on McLuhan's prediction and suggests "the information space opens wide asymmetrical possibilities for reducing the fighting potential of the enemy."<sup>15</sup> By transcending geography and traditional battlefields, information warfare evens the playing field and renders traditional military superpowers, like the United States, as a peer in the digital battlespace and in the minds of diverse populations.<sup>16</sup> Acting as a force multiplier, troll armies and digital repeaters need no military training, never bear arms, yet significantly impair, influence and shape the battlefields once considered the sole domain of soldiers.

Further, at a cost of just tens of millions of dollars a year for a troll army, nations like Russia are advancing political and social agendas through non-attributed, de-centralized efforts resulting in soft annexation without having to engage in costly traditional warfare. While the amount of money Russia is spending in supporting their vast information warfare machinery is unknown, it is clearly much less sustainable than a costly traditional war. Further, it allows Russia to fund advancements within their traditional military capacities while they continue to effect nationalistic agendas in neighboring nations.



**The way ahead for responding to information warfare**

The evolution of cyber and electronic warfare, information operations and psychological operations capacities hold promising paths for the world's militaries to respond to non-attribution and information warfare attacks within the frameworks of their own moral compasses. But, just as information warfare has implications beyond military into the political, economic and social, so must the responses to information warfare and non-attribution come from those realms as well.

Bruce McClintock, an adjunct policy analyst at the RAND Corporation and a former U.S. Defense Attaché in Moscow, suggests that "tangible actions" must be taken to ensure unity of purpose in response to information warfare. McClintock suggests the *Tallinn Manual 2.0*,<sup>17</sup> released in February by the NATO Cooperative Cyber Defence Centre of Excellence, is a positive step towards linking international laws that apply to cyber operations but more needs to be done.

McClintock sees the greatest areas for improvement being in common definitions, a clarified position and the linkage of international laws to cyber offenses because only when "laws and norms are binding will there be legal and tangible consequences" for actions within the cyber and information domains.<sup>18</sup> The editors of the *Tallinn Manual 2.0* may have best described the challenge being faced by NATO and other nations as they look forward when they stated: "The Russians are masters at playing the 'gray area' in the law, as they know that this will make it difficult to claim they are violating international law and justifying responses such as countermeasures." †

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# SUN TZU

## THE ART of WAR

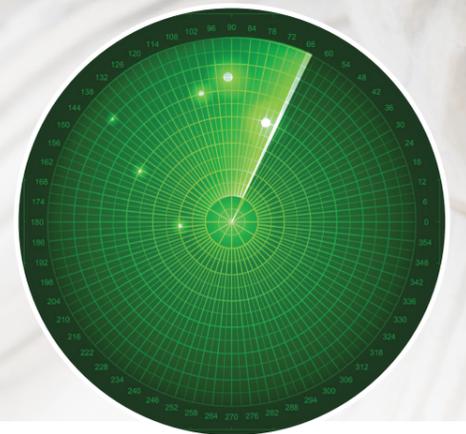
by MANUEL POEJO TORRES  
 Hybrid Warfare Subject Matter Expert and  
 Ph.D. Researcher on Political Theory

**Introduction**

A writer, warrior, and philosopher, Sun Wu<sup>1</sup> is traditionally credited as the author of *The Art of War*, a piece written more than two thousand five hundred years ago and still as contemporary and fundamental as it was then. Within it are inscribed lessons on how to conquer battlefields, triumph over enemies and achieve victory in war as well as in life.

Sun Tzu presents a holistic cohesive approach to conducting and winning wars. His ancient teachings are reflected in successes and defeats along the history of warfare and, even today, when correctly followed and interpreted, Sun Tzu's lessons, while they cannot predict the results of the battles, can be very useful.

According to Professor Beatrice Heuser this is in fact one of the best two books ever written on strategy and warfare.<sup>2</sup> Sir Basil Henry Liddell Hart asserted that, compared to von Clausewitz's *Vom Kriege* (On War), "Sun Tzu has clearer vision, more profound insight, and eternal freshness."<sup>3</sup> And, even if *The Art of War* is made up of deceptively simple aphorisms, it is still vital to the understanding of the nature of



strategy and war itself. In war, those who decide on ignoring Sun Tzu's teachings will be left in darkness, governed not by their actions, but by something that Machiavelli called *fortuna*, or simply luck, which is the greatest enemy of security and safety of the state.

There is no real evidence that Sun Tzu really existed. Some scholars, namely Cheng-tsê, believed that the mythical "Master Wu" never existed and was in fact a fabrication by philosophers of the Warring States period (453-221 B.C.).<sup>4</sup> Either way, ancient writings of *The Art of War* echoed through space and time, adapting to the new dimensions of warfare, and thereby demonstrating their universality. A timeless classic piece packed with very important strategic teachings intended for practitioners of war, this work could very well be the first example of a Mirror for Princes writing technique.<sup>5</sup>

It is no less interesting to note that Sun Tzu's masterpiece is not only a text on strategy and manoeuvres, but also one of the first reflections on human psychology in warfare. Not focusing solely on strategies and tactics to defeat the enemy, Sun Tzu went far beyond writing on how the enemy could react if attacked and how its reaction would influence the outcome of a battle. Master Wu understood the human nature and believed that control was the ideal of victory; thereby he dismissed vulgar aggression and sought absolute excellence by breaking the enemy's resistance without fighting or shedding blood.

In strategic theory like in any other theory, as authors suffer from the same illness—"interpretation" and "translation"—a side note needs to be made on this matter. When B. H. Liddell Hart claimed that Sunzi's writings were more clear, profound and fresh, one could certainly disagree. At first sight, when compared to *On War*, *The Art of War* seems more simple and direct to the point, but Sun Tzu's writings are in fact more holistic and profound than von Clausewitz's.<sup>6</sup> Not only that, but the original (and incomplete) ancient Chinese texts written on pieces of bamboo wood, suffered greatly from being translated, which significantly hindered their true perception. Hence, leading scholars admitted that Sun Tzu and von Clausewitz are positioned on different ends of the strategic spectrum. Although that might be the common interpretation, Michael Handel shows us a different vision of this issue when claiming:



The author pictured at JWC. Photo by JWC PAO

... they [Sun Tzu and von Clausewitz] agree that the most rational way of waging war is usually to fight for the shortest possible duration and win decisively if possible. Any other types of prolonged and indecisive battles are to be avoided.<sup>7</sup>

Nevertheless, when it comes to the issue of victory without fighting, there are certainly differences between the two authors:

... von Clausewitz writes that destroying the enemy's army is most often the key to victory in war; Sun Tzu recommends that the best alternative is to attack the enemy's strategy.<sup>8</sup>

Sunzi, influenced by the chaotic period of the Warring States, shared the early Confucian assumptions that "... the superior man, extolled in the classics as the highest product of self-cultivation, should be able to attain his ends without violence."<sup>9</sup> This is evident in the following passage of *The Art of War*:

"... those skilled in war subdue the enemy's army without battle. They capture his cities without assaulting them and overthrow his state without protracted operations."<sup>10</sup> (One wonders, is he referring to winning their hearts and minds?)

But for the general, to wage successful war, his orders need to be followed and executed without question. Martin van Creveld asserted that the military virtue of an army is based on strict discipline, which at the same time is the general's method to enforce necessity on his troops.<sup>11</sup> In order to illustrate this issue, we

would like to refer to the famous tale of Sun Tzu's army of concubines.

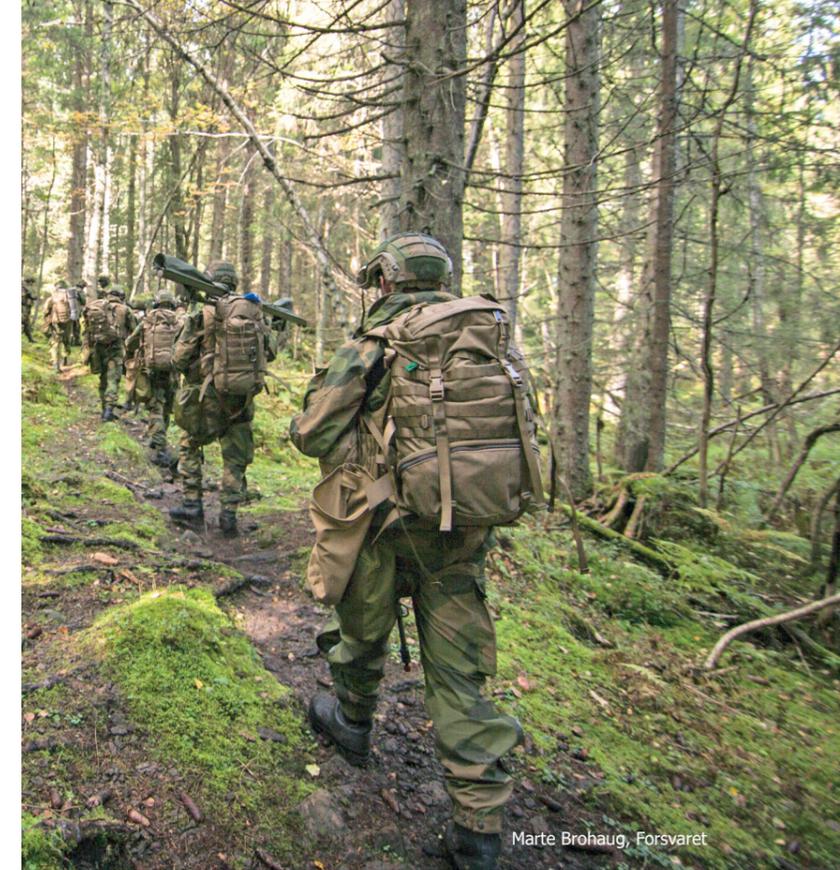
**D**URING THE ERA of Warring States, King Ho-lü of Wu, when faced by imminent invasion of the State of Ch'u, summoned Sun Tzu, by then already a famous strategist. Mystified by Master Wu's military capabilities, King Ho-lü asked him if he could organize the palace concubines into a military force. The legendary general happily accepted the challenge and promptly explained to the women what they had to do when he gave the command. The first attempt flopped because every single one of them giggled. Sun Tzu then realized that to be victorious, one should have etched in one's mind the five factors of war, the first of them being *moral influence*, which "causes the people to be in harmony with their leaders, so that they will accompany them in life and unto death without fear of mortal peril."<sup>12</sup> The fourth element is *command*, which means that a General should be wise, sincere, human, courageous, and strict.<sup>13</sup> However, since the commander needs to be seen as the "Respected One", sometimes harsh decisions must be taken. And so, Sun Tzu made an example out of the two concubines most favoured by the king by demanding that their heads be cut off. After witnessing that terrifying scene, every woman fell into line, and Sun Tzu told King Ho-lü that they were ready to follow his command "through fire and water."<sup>14</sup>

Sunzi explained that for a general to win his battles, it is certainly necessary to master the five fundamental principles of war: moral influence and command, which have already been mentioned, then *weather, terrain and doctrine*. Although these principles were envisioned from a holistic Taoist point of view, they may be perceived as operational factors as well. "Weather" not only stands for the "interaction of natural forces"<sup>15</sup> which should be taken into consideration when designing strategy plans for war or peace, but is also relevant in deciding which season could be most favourable for campaigning, according to Creveld.<sup>16</sup>

Another factor, "terrain", hints at the physical characteristics of the theatre of operations, which may certainly be decisive for victory or defeat in battle. And by "doctrine" Sun Tzu meant everything related to the organization of the army, from the hierarchy system



Sun Tzu's masterpiece is not only a text on strategy and manoeuvres, but also one of the first reflections on human psychology in warfare.



Marte Brohaug, Forsvaret

to the management of the supply lines or, put differently, the politics and logistics of warfare. Although mastering these principles is important, they are not sufficient by themselves, but need to be explored in depth. Sun Tzu asserted that a general need to "create situations which will contribute to their accomplishment."<sup>17</sup>

*The Art of War* presents many important ideas although Sun Tzu stated that a commander could predict victory under five important circumstances: (1) one who understands when he can fight, and when he cannot fight, will be victorious;<sup>18</sup> (2) one who knows how to use different-sized forces will have success;<sup>19</sup> (3) "one whose ranks are united in purpose will be victorious;<sup>20</sup> (4) one who is prudent and cunning will defeat the unprepared enemy;<sup>21</sup> (5) "one whose general is able and not interfered with by the ruler will be victorious."<sup>22</sup> All of these circumstances come together under a bigger notion, materialized by Sun Tzu's words when declaring that "All warfare is based on deception."<sup>23</sup>

### The art of achieving victory

Like the latter idea, now four structural concepts identify the strategic theory of *The Art of War*: One of the most popular quotes by Sun Tzu begins by stating "Know the enemy and

know yourself, in a hundred battles you will never be in peril."<sup>24</sup> While this message may appear simple and clear, an in-depth analysis will reveal other dimensions and let them multiply. Master Wu clarifies that if one knows oneself, but is ignorant of the enemy, then one's chances of losing will be equal to those of the enemy. Once again, if one is ignorant of oneself and of the enemy, then one most certainly will lose every battle. This means that Sun Tzu was concerned with achieving rational victory rather than pure defeat of the enemy. When Sun Tzu's visions are compared to modern warfare, a change in the war paradigm immediately springs to mind. During the World Wars, the objective was not logical victory over war; rather, an ulterior objective was envisioned, which was to destroy and annihilate entire nations. Contrary to what Sun Tzu recommended, the true objective was no longer the mind of the enemy's ruler, but the body of the troops<sup>25</sup> and the enemy's people.

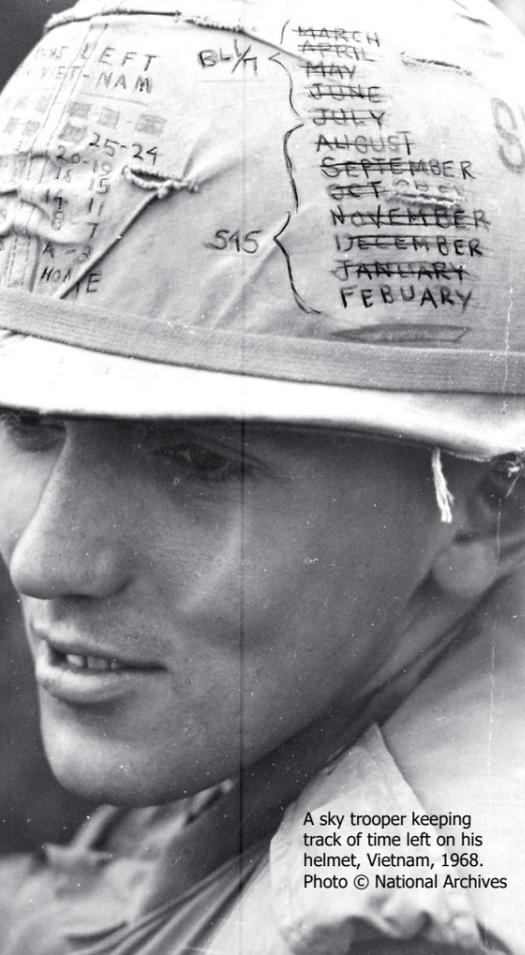
Sun Tzu said, "For to win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the acme of skill."<sup>26</sup> The point behind this idea, Robert Leonhard explains, is the recognition that even when a force wins a battle, it will unquestionably lose resources like men, time, equipment, or even willpower.<sup>27</sup> So, the

wise general in need of an attack would carefully consider when to launch it, and how to accomplish it, bearing in mind that "[t]hus the strongest, most successful action is at the same time the most economic one."<sup>28</sup>

In regard to victory, the general needs to assess the costs of battle. To do so, the tools of utmost importance in war are spies and intelligence. It is clear that for Sun Tzu "information represents a key to success in war,"<sup>29</sup> where secret agents have not only an important role, but they are the sovereign's treasure.

Master Wu distinguished five types of spies: "...native, inside, double, expendable and living."<sup>30</sup> Native or local agents are the enemy's people, *i.e.* people familiar with sensitive information of interest to the general. Inside spies are agents who hold relevant positions inside the enemy's army. Double agents are, as the name points out, the enemy's spies, but employed by one's own side. Living agents are one's own spies, who are expected to collect intelligence on the enemy. Expendable spies make up the zenith of Sun Tzu's art of deception and are sent into enemy lands in order to spread fabricated information to deceive the enemy and make him work against himself. Chia Lin emphasized, "An army without secret agents is exactly like a man without eyes or ears."<sup>31</sup> Sun Tzu asserted:





A sky trooper keeping track of time left on his helmet, Vietnam, 1968. Photo © National Archives

the more he contributes in manoeuvre, the less he demands in slaughter.”<sup>34</sup>

Finally, concerning one’s flexibility, Master Wu declared that “Now an army may be likened to water, for just as flowing water avoids the heights and hastens to the lowlands, so an army avoids strength and strikes weakness.”<sup>35</sup>

When Sunzi commanded the Wu army, he opted for an indirect attack on Ch’u’s enemy forces because he lacked the manpower required to risk a decisive battle. In *The Art of War*, direct attacks are not seen as very important; instead—and due to the fact that Sunzi’s forces were smaller—the author emphasized the use of indirect strategies. To counter the forces of Ch’u, Sun Tzu made use of indirect manoeuvres, ensuring he stayed mobile and extremely flexible at all times and using decoys, cunning and surprise tactics. One could affirm, however, that Sunzi’s forces were only that flexible due to their small number. Master Wu kindly asserted otherwise: “... management of many is the same as management of few. It is a matter of organization.”<sup>36</sup>

Martin van Creveld explained that one should “[u]se speed and secrecy to make out that you are concentrating at one place, then attack at another.”<sup>37</sup> And like the water metaphor, a force should be adaptable to variations in the enemy’s strategy. It should be able to adjust itself to the battle new needs, and like water not have a constant form, or routine.

On this last point, there is also the example of the Vietnam War, in which the United States, at the time fueled by their deceptive world power status, stormed through the jungle ignoring Sun Tzu’s teachings, only to suffer tremendous losses. Long before that conflict, Master Wu had already understood that numerical superiority confers no advantage at all in winning the war. Indeed, forces may be beaten using cunning tactics, indirect attacks and superior intelligence collection, which is exactly what the Việt Cộng did in Vietnam. When fighting the American leviathan, the North Vietnamese remained hidden, always moving and anticipating U.S. movements; they prepared surprise ambushes and concentrated attacks. They knew their enemy very well, and followed the teachings of Sun Tzu. Instead of attacking American troops, they chose to hit their strategy and the democratic decision-makers back home.

Thirty-five years after the end of this

war, the United States faced a similar enemy in Afghanistan. The creation of the PRT (Provincial Reconstruction Teams) was important to generate synergies with the Afghan population and seems to have inherited Sun Tzu’s wisdom: “Treat the captives well... Hence, what is essential in war is victory, not prolonged operations.”<sup>38</sup> Based on this quote one may argue that the Afghan war has been prolonged for a long time, which means that although some efforts have been made (when comparing to Vietnam), Allied Forces and the U.S. still do not completely master Sun Tzu’s warfare techniques. But, once again, one may ask whether this is a problem related to the mastery level of Sunzi’s teachings or a problem lying in their ineptitude to adapt to the new dimensions of warfare.

Some critics claim that *The Art of War* does not apply to other dimensions of warfare (besides land power) like airpower, naval power, or some other new elements such as cyber or Space power. Proving them wrong is only a question of time. Master Wu could not envision twenty-five centuries of technological advances, albeit he did predict the immutable nature of war and the human thirst for victory. And these are inseparable conditions of war itself.

### Conclusion

Did Master Wu ever exist? What explains him? An unquestionably and profoundly holistic, everlasting work on strategy and ways of conducting war. Even today, *The Art of War* constitutes a millennial centre of gravity for strategic affairs. More than ever, Sun Tzu’s teachings are identified as vital knowledge for fighting the wars of the future. With the escalation of the destruction power of the 21st century’s new weaponry, direct wars lose purpose due to the fact that mutually assured destructions can result from a classic or conventional confrontation between two major forces of our time. Here enter Sunzi’s aphorisms to guide the way to waging war and achieving victory.

If one considers indirect wars, the wars of the future, then *The Art of War* would convey its absolute meaning for the simple reason that it holds the key to unlock the path for victory. Cultivating a deep understanding of the enemy is essential to victory, but alone it will not be decisive, it will not win battles. Sun Tzu won the battle against Ch’u by adding to this conduct organized planning of his troops, indirect



German Rheinmetall KZO unmanned aerial vehicle (UAV) being launched during Exercise IRON WOLF II in Lithuania, which involved 2,300 troops from 12 NATO Allies. Photo by NATO

Until present day, Sun Tzu and The Art of War faced no technological or human innovation able to revolutionize the ancient Chinese way of waging war and achieving victory.

“Thus, those skilled in war subdue the enemy’s army without battle. They capture his cities without assaulting them and overthrow his state without protracted operations.”<sup>32</sup>

(David H. Petraeus: “Winning their hearts and minds”;

von Clausewitz: “Winning the centre of gravity: their hub of power; their moral will.”)

Once again, obviously, for Master Wu the most eminent way to resolve a conflict is to use diplomacy and negotiation. It is only if such efforts fail and there is no alternative but to fight that one should use force as a last resort, disrupting the enemy’s alliances, attacking his army and laying siege to his walls. Again, sounding like von Clausewitz: Limited warfare uses only the power and violence you need! Indeed, one may say that war is the result of failed politics.

Sun Tzu’s excellence shines through via *The Art of War*’s original words: “Thus, what is of supreme importance in war is to attack the enemy’s strategy.”<sup>33</sup> Sir Winston Churchill seemed to have grasped these ancient teachings and made them his own when after World War I he claimed, “... battles are won by slaughter and manoeuvre. The greater the general,

attacks and cunning tactics. Until present day, Sun Tzu and *The Art of War* faced no technological or human innovation able to revolutionize the ancient Chinese way of waging war and achieving victory. For all these reasons, Sun Tzu and *The Art of War* together stand the test of time. Their wisdom is as true today as it was in their time, and is best summed up by one of their most important maxims:

“War is a matter of vital importance to the state; the province of life or death; the road to survival or ruin. It is mandatory that it be thoroughly studied.”<sup>39</sup>



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### END NOTES:

1 Sun Wu was the real name of the Chinese famous general, who later won the honorific title of “Master”, which in Chinese can be read as “tzu” or in Pinyin “zi”. Pinyin is part of the Romanization system, which represents the pronounce of Chinese characters. Pinyin was developed by the Popular Republic of

China, where Sun Tzu can be read as Sunzi and Peking as Beijing. Briefly Sun Wu can be named “Sun Tzu”, “Sunzi” or simply “Master Wu”.

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4 The Art of War, p. 1; The Era of Warring States was a war fought by every major power, that culminated in the unification of China under the heavy rule of the Qin Dynasty in 221 B.C.

5 Just like Christine de Pizan’s The Book of Arms and Chivalry, giving guidance and presenting a role module, for nobility. In the case of Master Wu, this is not so evident, although The Art of War certainly shares some characteristics.

6 Due to the fact that Sun Tzu was deeply influenced by the Taoism, making the interpretation very difficult, and with different levels of spiritual interpretation.

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32 The Art of War, ch.III, 10, p. 79.

33 The Art of War, ch.III, 3, p. 77

34 Churchill, Winston S.: The World Crisis (New York: Charles Scribner’s Sons, 1923), vol.2, p.5.

35 The Art of War, ch.VI, 27, p. 101.

36 The Art of War, ch.V, 1, p. 90

37 The Art of War: War and Military Thought, p. 38

38 The Art of War, ch.II, 19-21, p. 76

39 The Art of War, ch.I, 1, p. 63

ON THE COVER



# Component Integration Challenges presented by Advanced Layered Defence Systems (A2/AD)

by CAPTAIN WILLIAM A. PERKINS  
 United States Navy  
 Maritime Air/Carrier Operations, Combat Air Branch  
 NATO Joint Air Power Competence Centre (JAPCC)

NATO should seek to foster a training environment that permits high-intensity learning, to include “failing to induce adaptation to achieve success” as an acceptable method of learning.

**Author's Note:** The observations and assessments in this article apply only to NATO's exercise programme, and are not intended to indicate any assessment of past NATO operations or current operational planning. Furthermore, many of these observations have been articulated in one form or another by senior leaders across the Alliance at various speaking engagements, such as the Air and Space Power Conference, the Maritime Expeditionary Operations Conference, and in articles and speeches within the public domain. These observations, therefore, should be viewed as unclassified perspectives on the conduct of training teams during exercises.

**Editor's Note:** The following article is an abridged version. The original, non-abridged, article is published on JWC's Intranet NATO SECRET (NS) website portal. Additionally, a brief classified NS covering specific weapons systems and joint integration may be accessed on JAPCC's NS homepage under the A2/AD Section.

# A

Anti-Access/Area Denial (A2/AD) is a term that has grown in the vernacular of many NATO Nations in recent years. The concept of A2/AD is not viewed in the same manner by every nation. In fact, some see this as a new buzzword for an old problem. There are, indeed, fundamental tenets of the concept, which brings new challenges to the Alliance. Furthermore, there is not currently an accepted NATO definition of the term. Some refer to A2/AD as “that family of military capabilities

used to prevent or constrain the deployment of opposing forces into a given theatre of operations and reduce their freedom of manoeuvre once in a theatre.”<sup>1</sup> This article will use this verbiage as a working definition to serve as a baseline for discussion.

The key phrase in this particular definition is “family of capabilities”. It is in this area where some nations, and the respective services within those nations, start to diverge in their understanding and representation of the nature of the challenge. In many circles, the term A2/AD has a strict “air” connotation. There is, at times, a prevailing belief that this is an “air component issue”, and one “the air component needs to solve”. Furthermore, looking strictly at the military capabilities of the A2/AD system is also potentially mischaracterizing the nature of the challenge. In fact, for these two reasons, the United States Navy has ceased using the term, as explained in September 2016 by the U.S. Chief of Naval Operations, Admiral John M. Richardson: “The problem with the A2/AD term is that it conflates strategy with tactics in a way that neglects the non-military aspects of anti-access warfare, minimizes the role of deterrence, and focuses us like a laser

beam on tactical analyses on how particular opposing weapons systems will perform.”<sup>2</sup>

Furthermore, many opine that A2/AD is not a new concept, only today's manifestation of the struggle between offensive and defensive capabilities and technological advancement. However, what is new today are the ranges at which these systems operate in air, land and above/on/below the sea. We are now entrenched in a situation where blue and red forces will operate well inside each other's area of influence, in an overlapping bubble of power projection.

This article will discuss the impact of A2/AD as it relates to the Alliance and review how NATO's current exercise programme is challenged with finding the best approach to understanding and addressing this complex problem. Rather than the “buzzword” A2/AD, the term

**OPPOSITE:** Celebration of the 72th anniversary of the Victory Day, Russia, 9 May 2017. Picture shows 9K720 Iskander (NATO reporting name SS-26 Stone), a mobile short-range ballistic missile system. Photo by Free Wind 2014, Shutterstock. HNLMS BRUINVIS during a NATO submarine rescue exercise, DYNAMIC MONARCH. Photo by WO Artigues (MARCOM). A close-up of a short-range ballistic missile system, photo by Denis Kabelev, Shutterstock. **ABOVE:** A stamp recently printed in Russia, Olga Popova, Shutterstock.





ABOVE: Proliferation of ballistic missiles, such as SS-26 Iskander (pictured on the right), poses an increasing threat to Allied populations, territory and deployed forces. Many countries have, or are, trying to develop or acquire ballistic missiles. The proliferation of these capabilities does not necessarily mean there is an immediate intent to attack NATO, but it does mean that the Alliance has a responsibility to take this into account as part of its core task of Collective Defence. NATO graphic illustration ([www.nato.int/cps/en/natohq/photos\\_112331.htm](http://www.nato.int/cps/en/natohq/photos_112331.htm))

“Advanced Layered Defence Systems” will be used in an effort to further articulate the joint nature of the problem facing the Nations, as well as Allied Command Operations and the subordinate components from the Joint Force Command level down to the tactical units.

As expressed at the Wales and Warsaw NATO Summits, there is a growing realization across the Alliance that the changing global security environment is bringing new challenges to the Alliance. The resurgence of a Russia that is seeking more presence on the global stage has manifested across the entire Alliance, from the High North into the Atlantic Ocean, in the Mediterranean Sea and in the Baltics. Russia has spent a significant amount of time, money and effort to modernize her capabilities, and focus that effort to counter NATO’s strengths. The installation of modern Advanced Layered Defence Systems in critical areas is being accomplished with the goal to impede NATO’s freedom of manoeuvre in the Eastern Mediterranean and the Baltic Seas. Therefore, it is incumbent upon NATO’s exercise and training programme to prepare accordingly. There are elements of the advanced layered defence challenge, which can be exploited through proper,

joint analysis of the problem set. NATO currently retains a technical advantage but cannot cede the advantage to a potential adversary by discounting adversary capabilities and assuming Alliance victory just by showing up.

**What is the JAPCC, and why is A2/AD discussed in the JWC’s The Three Swords?**

The Joint Air Power Competence Centre (JAPCC) was the first organization to be certified under NATO’s Centre of Excellence (CoE) concept (2005) and is the CoE dealing with the entire spectrum of Air and Space Power challenges for the Alliance. The JAPCC is comprised of 16 Member Nations that collaborate and address challenges to the Alliance in the domain of Air and Space in a joint manner. General Tod Wolters serves as the JAPCC Director in addition to his other roles as Commander Allied Air Command as well as Commander of U.S. Air Forces in Europe and Africa. He has charged the organization to “serve as NATO’s catalyst for the improvement and transformation of Joint Air and Space Power, delivering effective solutions through independent

thought and analysis”.<sup>3</sup> To aid in this effort, the JAPCC and the JWC signed a Memorandum of Understanding (MoU) in 2012 to codify the JAPCC support to JWC-directed exercises. The JAPCC provides a critical capability to the JWC, which is necessary to achieve the level of fidelity in the larger exercises which the JWC directs. As articulated in this MoU, the JAPCC provides expertise on Air and Space Power to JWC training and exercise activities focused on delivering improved interoperability, standardization and qualitatively transformed air capabilities through exploration of concepts, promotion of doctrine development, and through the support of experimentation and research processes employing new technologies and techniques.

Since that time, the JAPCC has provided expertise supporting the JWC in the role of Opposing Forces Air (OPFOR AIR) during the TRIDENT Series of Exercises (Joint Task Force certification). Of note, the JAPCC also fulfils this same role in the Ramstein AMBITION exercise series, supporting the AIRCOM’s (Allied Air Command) component certification, as well as during KALKAR SKY exercise series, supporting the German National Air Operations Centre (AOC) certification. As such,



**The installation of modern Advanced Layered Defence Systems in critical areas is being accomplished with the goal to impede NATO’s freedom of manoeuvre in the Eastern Mediterranean and the Baltic Seas.**

the JAPCC has accrued over five years of observing joint and component-level certifications as well as the performance of myriad levels of NATO and national Training Audiences. Many of the “food for thought” recommendations regarding NATO’s exercise programme as related to Advanced Layered Defence Systems stem from these past five years as OPFOR AIR spanning multiple exercises with different scenarios and adversaries.

Furthermore, the JAPCC serves as the co-chair of the Bi-SC Maritime Air Coordination Conference (MACC), along with the Commander Maritime Air NATO (CMAN), Allied Maritime Command’s “air” hat. Together with CMAN, a close relationship has been developed with Naval Striking and Support Forces NATO (STRIKFORNATO) to collectively address air and maritime component challenges to foster improved integration, as STRIKFORNATO oversees integration of U.S. Aircraft Carrier Strike Group and Expeditionary Strike Group capabilities to the Alliance. It was this past year’s conference, themed “Delivering Joint Effect from the Sea”, which kicked off a deeper discussion regarding the issues each component faces, posed by Advanced Layered Defence Systems.

The timing of the MACC 2017 was juxtaposed against real world demonstrations of some of these capabilities, as the Russian Federation began not only installing new elements of the layer (an S-300 SAM system) in Tartus

Syria,<sup>4</sup> but also demonstrating to the world the reach of some of their modern cruise missiles deployed from air, surface, and below the surface. Kilo class submarines and frigates firing Kalibr cruise missiles from the Mediterranean, corvettes and cruisers doing the same from the Caspian Sea, and the potential installation of advanced surface-to-air missile (SAM) systems in Syria were coalescing into a new problem set for the Alliance in the Eastern Mediterranean, which required deeper analysis and coordination by the air and maritime components. The MACC offered an opportunity to discuss some of these in detail.

Finally, as the JWC was finalizing the script and scenario for TRIDENT JAVELIN 2017, it became apparent there was not only a desire to conduct an Article 5, large scale and high-intensity major joint exercise, but also a growing need to conduct this exercise against a peer adversary in such a large simulated operation in order to more thoroughly prepare the Alliance to deal with issues presented by these particular challenges. The JAPCC served once again as the OPFOR AIR team and helped shape the scenario scripting and execution so that not only are the critical Training Objectives met by the Joint Force Command and the subordinate components, but also infusing the

joint nature of this layered defence problem into the scenario so that it was better understood by the exercise participants.

**Why is the Advanced Layered Defence System challenge significant to NATO?**

Part of the problem with comprehensively dealing with this issue is that the nature of the challenge is not well understood across the components or joint force. Many look at the A2/AD challenge from a systems perspective, and if a particular system does not impact them, influence their component or degrade their particular system directly, then it is assessed to be “someone else’s problem”, and that assumption is usually directed toward the air component.

However, a brief overview of the issue highlights the inter-dependency of the components and why this is in reality a joint issue, which in many senses will absolutely require other instruments of National/Alliance power beyond just the military. “[A2/AD] is a family of military capabilities used to prevent or constrain the deployment of opposing forces into a given theater of operations and reduce their freedom of manoeuvre once in a theatre.”<sup>5</sup> The true role of these Advanced Layered Defence



ABOVE: AN/SPY-1 Radar (NATO sea-based radar) is the key component of Aegis Ballistic Missile Defence System manufactured by Lockheed Martin. The passive electronic scanning system is computer-controlled, using four complementary antennas in order to provide full 360-degree coverage. Photo by NATO





Systems is to impede, degrade or even deny NATO freedom of manoeuvre in one or more domains. In the most extreme case against the most modern systems, it can impede action simultaneously in all domains. This challenge cannot, and will not, be solved by one component or one weapons system alone.

### In-depth look into the joint nature of the problem

The domains are becoming more and more linked. The insidious nature of layering these defence systems has the secondary (and tertiary) effect of mutual overlap, creating mutual interference. The JAPCC's analysis of the problem begins in the air domain. The ranges of modern systems have been increased with the goal of pushing NATO back out of the airspace. SAM technology has increased the range of the most modern systems to approach 400 km (S-400; 248 miles). Underneath the long-range SAMs are frequently positioned short range SAMs (*i.e.* SA-17) designed to interdict kinetic kill options entering the battlespace (for example, NATO's stand-off weapons, such as Tomahawk or Scalp). Defending each critical system is another layer of air defence, best expressed by capabilities such as the SA-22 Pantsir point defence system.<sup>6</sup> If a stand-off missile strike makes it past the S-400, and also past the SA-17, it still has to defeat the Pantsir before

it can achieve a kill on the long-range SAM. However, the Pantsir is typically deployed in batteries of 2-4 systems per critical node, with the capability to launch while moving at as many as ten targets simultaneously with guns and missiles.<sup>7</sup>

**If Tomahawks/Scalps were the answer to the A2/AD problem, then NATO would not have an A2/AD problem.**  
JAPCC

As a demonstration of likely employment tactics in other geographic areas, open source reporting of Russian movements in Syria indicates that multiple Pantsir systems are employed as a defensive layer around the Russian air base in Latakia<sup>8</sup>, protecting not only the airfield, but potentially layering defence around its long-range SAM system (such as S-300) should one be fully deployed to this base. Other options to make the layers even more dense include the integration of a missile system between the S-300 and SA-22, such as the SA-17.<sup>9</sup>

The recent Russian exercise “Zapad 2017” demonstrated the Russian Federation's use of Kaliningrad to host many of these types of anti-access systems in an area which can easily influence deep into NATO's territory. “Russia has invested considerable energy into

developing A2/AD capabilities and carefully positioning them to maximize their strategic effect. Russia's A2/AD deployments span as far north as the Arctic down to Syria, with particular concentrations in Kaliningrad and around Crimea—a sort of ‘thicket of overlapping and redundant A2/AD systems.’”<sup>10</sup>

This layering of Integrated Air Defence Systems (IADS), integrated through the use of advanced early warning systems and coordinated through improvements in Command and Control (C2) systems defended by a mobile point defence capability, challenges joint Intelligence, Surveillance and Reconnaissance (ISR) and in many ways, makes TST/DT (Time Sensitive Targeting/Dynamic Targeting) strikes much more challenging.

**IADS are not A2/AD; IADS are a component of A2/AD.**  
JAPCC

Further complicating the problem for the air domain, typical airborne joint ISR collection assets are vulnerable due to the long-ranges of modern SAMs, as they frequently must often operate within the adversary's weapons systems range to generate collection. Underneath the air defence layers are capabilities that impact the maritime and land domains. Long-range anti-surface ship cruise missiles (such as the SS-N-22 Sunburn) and short and medium-range



The surface-to-air missile Pantsir-C1 missile air defence gun system on the basis of Kamaz trucks in Kaliningrad, Russia, 9 May 2016. Photo by Irina Borsuchenko, Shutterstock.

ballistic missiles (such as the SS-26 Iskandar/Stone) have been designed to counter NATO's anti-missile defence technology, although to what extent is uncertain. What is certain is that these types of missiles are typically located under the air defence umbrella described above, protecting them from stand-off weapons and making the challenge of “rolling back” these systems to enable maritime and land manoeuvre much more difficult. Technological development into using ballistic missiles in an anti-shipping role, such as the PRC's DF-21, which could potentially be launched from ships or aircraft such as the H-6N bomber,<sup>11</sup> and also into hypersonic anti-shipping missiles—the SS-N-33 Zircon ASCM may approach Mach-6 when fielded<sup>12</sup>—is ongoing.

**I**MPROVEMENTS TO the naval launched cruise missiles have resulted in not only increased range, but also an ever-increasing array of platforms from which they can be deployed. The Russian Federation has em-

ployed Kalibr cruise missiles from Kilo class submarines, corvettes and cruisers, as well as air launched cruise missiles in combat over Syria. To make this more problematic, Russian Defence Minister Sergei Shoigu announced in July 2015 that Russia “will boost the number of cruise missiles fivefold in the next three years and by 30 times by 2020.”<sup>13</sup> These can influence not only the maritime environment, but also the fielded land forces throughout much of NATO's territory.

Submarines present a unique challenge. Although locating, tracking and being prepared to engage submarines is a core competency of the Alliance, the two most recent NATO Summits declared anti-submarine warfare (ASW) as a priority shortfall area. Additionally, recent studies within the JAPCC and across the maritime community have shown that the proficiency of NATO in this area has declined along with nations fielding a dwindling number of ASW assets.<sup>14</sup> Furthermore, maritime patrol aircraft and ASW helicopters

are not able to operate inside an adversary's SAM range without other types of protection, made problematic by the existence of those same anti-access systems.

Finally, Russian submarine building has been on the rise, to include the fielding of three new classes of submarines. Indeed, Borei SSBN ballistic missile submarines are planned to replace the ageing Delta class; Yasen SSGN (nuclear guided missile submarines) are planned to replace the Oscar II class; and the Lada SSK attack submarine will augment and replace older Kilo class SS/SSK submarines. These new boats are designed to be quieter and capable of a larger set of mission portfolios than previous versions. Russia has also re-established the Black Sea Fleet in an effort to re-introduce a permanent submarine presence in the Mediterranean Sea.<sup>15</sup>

In addition to submarines, naval mines further complicate the undersea picture. Although most effective in chokepoints and shallow water, naval mines can be deployed in





Roll out ceremony of Russian nuclear submarine K-561 "Kazan" (Yasen class), Severodvinsk, Russia, 31 March 2017. Photo by Kuleshov Oleg/Shutterstock.

a variety of manners to degrade and impede maritime freedom of manoeuvre. "Today, stealthy mines made of fibreglass in sonar-deflecting shapes lurk amidst the clutter of the sea floor. There are buried mines covered by layers of sand, mud, and silt that no sonar currently in service can penetrate. There are 'rising mines' that wait in deep water for a ship to pass overhead, and then ascend until they are within range to fire a torpedo: Russia has one that fires a version of their supersonic, super-cavitating Shkval. There are reports that China is working on an anti-aircraft mine that can detect a low-flying helicopter—one towing minesweeping gear through the water, for example—and launch a missile at it. There are mines activated by a ship's magnetic field, by the sound of its propellers, by pressure differentials in the water as a ship passes overhead. There are mines that detect all of the above, then cross-check

"There is more activity from Russian submarines than we've seen since the days of the Cold War. This is very different from the period of quiet submarine activity that perhaps we've seen in the past. It is a level of Russian capability that we haven't seen before. The Russian Navy accomplished this through an extraordinary investment path not mirrored by the West and has made technology leaps that [are] remarkable, and credit to them."<sup>16</sup>

Vice Admiral Clive CC Johnstone  
Commander Allied Maritime Command

between different types of sensors to make sure they are not fooled by a decoy. There are mines smart enough to distinguish different kinds of ships and only wait for a chosen target, only oil tankers for example, or only aircraft carriers. There are even rumors of Chinese and North Korean mines with nuclear warheads."<sup>17</sup>

NATO has dedicated two entire Standing Naval Task Groups, SNMG 1 and 2, under Operational Control of Allied Maritime Command, to deal with the mine threat. However, finding the minefield and clearing the minefield takes a significant amount of time. Furthermore, this mine clearing activity will likely have to occur under an adversary's robust layered air defence and cruise missile layer, and the assets which perform this activity must be defended, as their self defence capability is limited.

In the non-kinetic domain, advances in Electronic Warfare (EW) have challenged

NATO's dominance in the electromagnetic spectrum. Jammers, such as the truck-mounted Krashuka-4, are specifically designed to counter NATO's Airborne (early) Warning and Control System (AWACS) and ISR capability and may even have the potential to damage equipment in addition to jamming the spectrum.<sup>18</sup> To further complicate the targeting process, the use of decoys, to include infra-red and mobile decoys, will likely be prevalent. The use of cyber effects to further hamper freedom of manoeuvre has a supporting role to these other kinetic effects and will likely be part and parcel of any peer adversary's actions. This concept has been demonstrated in Russian operations in Estonia and Georgia,<sup>19</sup> although complete attribution remains uncertain.

Finally, the existence of these Advanced Layered Defence Systems generates the possibility of sanctuary areas for opposing aircraft to operate, assemble in a location at a time of their choosing, and then use mass to push back defences and strike against targets on land, sea or in the air. This notional concept is a tactic that OPFOR AIR exploits in many exercises, to temporarily overwhelm defences to enable strikes; then the aircraft retreat into their sanctuary, back under the defensive umbrella and remain relatively protected from a counter-strike.

All of this demonstrates the multi-



FGS ROTTWEIL, a part of Standing NATO Mine Counter Measures Group Two, launching the autonomous underwater vehicle "REMUS" during EXERCISE POSEIDON 17 mine hunting drill, Black Sea, 10 March 2017. Photo by CPO Christian Valverde, HQ MARCOM

domain nature of the problem, which cannot, and will not, be solved by one weapon system, one service, or one component of the NATO Command Structure (NCS). Addressing the challenge requires detailed Centre of Gravity (CoG) and critical vulnerability analysis, through a joint and inter-agency thought process. Preparing for this, NATO should take a hard look at the conduct of its exercise programme to further emphasize the joint nature

necessary to address this problem. It is clear that not every exercise is the same and not every Training Audience reacts the same way to stimuli, therefore this section should be taken as a synopsis of five years of observation rather than an analysis of one team's performance in one particular scenario.

Rolling back these systems will take time. Time measured not in "hours", rather "weeks or months".

JAPCC

### Aspects of the challenge the Alliance should consider in exercises

In the process of preparing for operations in this environment, NATO has conducted exercises focused on re-experiencing challenges that are unique and distinct from missions as far back as Operation DELIBERATE FORGE over Kosovo. In that campaign, and in every endeavour since, NATO has enjoyed the luxury of both a permissive air environment and complete freedom of manoeuvre in the maritime domain. Neither of these two conditions is guaranteed in the future. In fact, many assess them as unlikely starting conditions for any future conflict. Learning to deal with the capabilities brought a peer—or near-peer—adversary that is challenging NATO in many ways.

The following observations have been

BELOW: OPFOR AIR during Exercise TRIDENT JAVELIN 2017, Joint Warfare Centre. Photo by JWC PAO



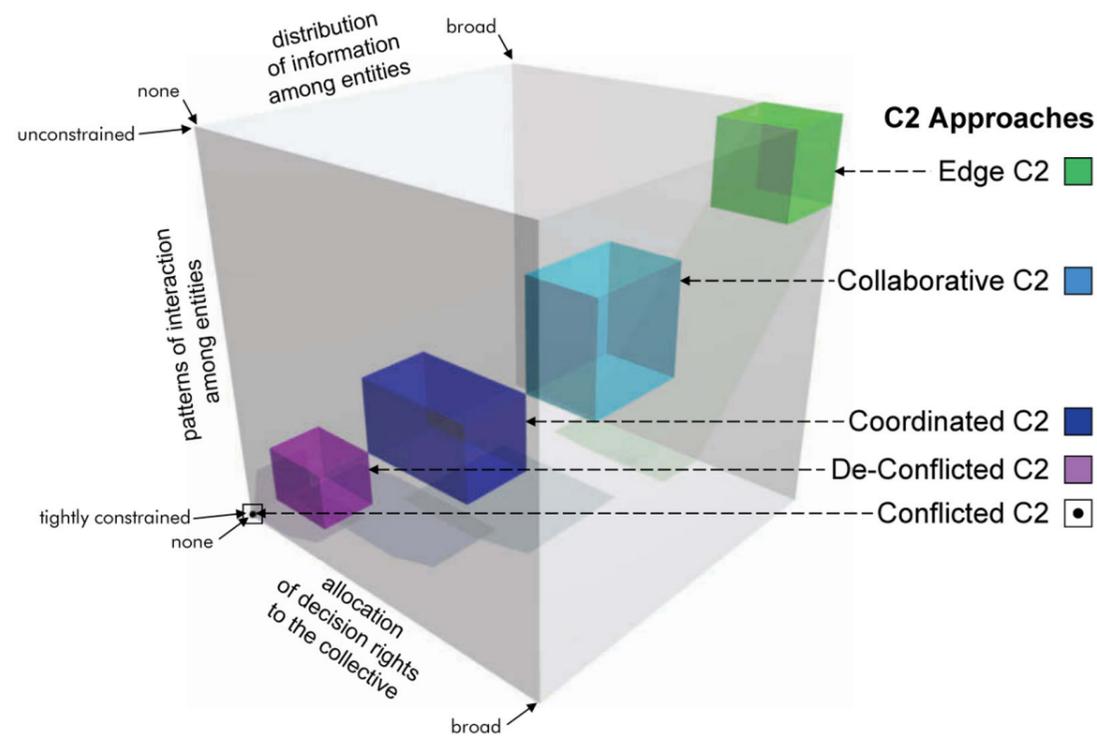


Figure ES 1: C2 Approaches as regions in the C2 Approach Space

ABOVE: The NATO Network Enabled Capability (NEC) Maturity Model. This model was developed by the RTO SAS-065 Research Task Group, chaired by Dr David S. Alberts from the U.S. Department of Defense, over a period of about three years. It defines a number of C2 approaches, ranging from Conflicted C2 to Edge C2, that correspond to different regions within the C2 Approach Space. (NATO NEC C2 Maturity Model, www.dodccrp.org).

compiled from exercises spanning 2012-2017 and covering the Training Audience responses to challenges presented by the *SOROTAN* and *SKOLKAN* scenarios, which are the scenarios created by the JWC and used for many National and NATO Component and Joint Force Command certification exercises.

**Stand-off weapons:** There is a growing realization that the range of the weapon systems involved precludes the use of stand-off weapons as the sole method to address the problem. This is due not only to the respective ranges of the long-range SAMs and the early warning detection capability, but also to the increased ability to engage the stand-off weapons when the systems are layered in a manner as previously outlined. (*Editor's Note: Observations on NATO's use of standoff weapons in exercises as well as joint integration may be found by accessing the full article on JWC's NATO SECRET Intranet website portal.*)

**NATO's Command and Control (C2) maturity level:** The NATO System Analysis and Studies (SAS-065) NEC model, (Figure ES 1 above), outlines levels of C2 maturity in an effort to delineate those things, which may be addressed to improve C2 in the future. (*Editor's Note: Observations on NATO's C2 maturity level may be found by accessing the full article on JWC's NATO Intranet website portal.*)

**What works in exercises?**

- Exposure to different levels of opponents, operating at different levels of technology, spanning from hybrid/asymmetric to peer competitor, in order to educate NATO staffs about various types of standard and non-standard tactics that may be encountered, and the capabilities required to defeat them.
- Recognition that freedom of manoeuvre in air, land and maritime must be earned, not granted as part of "scripting".

- Exposure to a realistic representation of peer adversary capabilities and tactics, not a restricted version of a peer adversary.
- Acceptance of the tactical assessments made by the Exercise Control (EXCON) team.
- Focus on a steep learning curve. Deal with a challenging scenario, which causes the Training Audience to at first *fail/struggle*, then *assess* why the plan did not go as scripted, *adapt* the plan and *improve* their performance during the next iteration of those Training Objectives.
  - Learning to deal with degradation and loss of capabilities. This will happen in reality, we must prepare for it by training to this level.
  - Losing aircraft/ships in a simulator as a result of flaws/errors in planning and execution, then incorporating the reason why it happened in order to prevent reoccurrence in the next exercise battle.
  - The end goal of this is to improve protection of NATO's high value assets. This



What they said

IF YOU WANT PEACE, PREPARE FOR WAR.

ROMAN GENERAL VEGETIUS  
"EPITOMA REI MILITARIS"

AS AN ALLIANCE, WE NEED TO STEP BACK AND TAKE A LOOK AT OUR CAPABILITY IN A MILITARY SENSE TO ADDRESS AN A2/AD CHALLENGE. WE MUST INCREASE THE READINESS AND RESPONSIVENESS OF THE ENTIRE NATO FORCE STRUCTURE. WE HAVE TO GET TO THESE INVESTMENTS, EXERCISES, AND TRAINING SCENARIOS THAT RAISE THE RESPONSIVENESS AND READINESS OF THE WHOLE FORCE.

GENERAL (RET.) PHILIP M. BREEDLOVE, FORMER SACEUR

NO WAR IS OVER UNTIL THE ENEMY SAYS IT IS OVER. WE MAY THINK IT OVER, WE MAY DECLARE IT OVER, BUT IN FACT, THE ENEMY GETS A VOTE.

GENERAL (RET.) JAMES MATTIS  
U.S. DEFENSE SECRETARY,  
FORMER SACT

THE DEPLOYMENT OF A2/AD CAPABILITIES CAN ALSO BE SEEN AS A SHOW OF FORCE AND INTIMIDATION.

NATO DEFENSE COLLEGE REPORT, FEBRUARY 2016:  
"TOWARDS A NATO COUNTER A2/AD STRATEGY"



THE COMMAND STRUCTURE IS THE BACKBONE OF OUR ALLIANCE. IT IS WHAT ALLOWS ALL OUR NATIONS TO PLAN, PREPARE AND, IF NECESSARY, TO FIGHT TOGETHER AS ONE.

JENS STOLTENBERG, NATO SECRETARY GENERAL

THE PROBLEM WITH THE A2/AD TERM IS THAT IT CONFLATES STRATEGY WITH TACTICS IN A WAY THAT NEGLECTS THE NON-MILITARY ASPECTS OF ANTI-ACCESS WARFARE, MINIMIZES THE ROLE OF DETERRENCE, AND FOCUSES US 'LIKE A LASER BEAM' ON TACTICAL ANALYSES ON HOW PARTICULAR OPPOSING WEAPONS SYSTEMS WILL PERFORM.

ADMIRAL JOHN RICHARDSON, U.S. CHIEF OF NAVAL OPERATIONS

**Maintaining Air Superiority:** F-35 Joint Strike Fighter aircraft. Developed by nine countries – Australia, Canada, Denmark, Italy, the Netherlands, Norway, Turkey, the United Kingdom and the United States – the F-35 is the world's premier fighter aircraft, combining advanced stealth with speed and agility. Photo by NATO



might be achieved by learning a hard lesson in a synthetic environment, rather than losing one for real in operations.

- Utilization of a detailed joint targeting process, including ISR and weaponeering.
- Recognition of the time, effort, stockpiles and resources, which will be consumed to degrade any layered defence system. Furthermore, it is realistic that NATO is likely to take losses during this phase, and this has impacts well outside the military audience.

There needs to be a culture change to accept that it is better to lose in an exercise than to lose in live battle.

*(Editor's Note: Observations on Training Audience specific performance trends may be found by accessing the full article on JWC's NATO SECRET Intranet website portal.)*

**Opportunities for improvement**

**1/ Exercise design:** The exercise design should capture the component friction points, and reinforce integration, and stimulate a joint approach to problem solving. This can be done both through Table Top Exercises with senior leaders as well as through Command Post Exercises (CPX), such as the TRIDENT Series. The idea is to expose Command Group and senior staff to the challenges which Advanced Layered Defence Systems impose on the joint force and their subordinate components in



Air Marshal Stuart Evans, Deputy Commander of Allied Air Command (AIRCOM), during a briefing at JWC. Photo by JWC PAO

a smaller forum, prior to the larger scale exercises that involve myriad levels of forces. It is not important whether NATO or OPFOR is winning at the end of an exercise. The key issue is that lessons are identified and truly learned.

**2/ Improve Centre of Gravity analysis of the Advanced Layered Defence System:** Not only is intelligence required to determine the location of systems for strike, but a deeper

analysis of the adversaries' vulnerabilities and weak points is necessary to determine the best method to achieve degradation of the system as a whole. Finding and degrading the critical vulnerabilities—the "Integration" part of IADS, as an example—is necessary for shaping operations upon entry into the Joint Operations Area. Furthermore, we need to be agile enough to respond to incremental success and adapt the plan to exploit a window that the opponent will work diligently to close as fast as able. We need to improve synchronization across the force, to include joint targeting and joint prioritization of effort.

Integration of stealth and other fifth generation technology into a solution is critical, but stealth is not a panacea and not a sole source solution to A2/AD

**3/ Consider more live exercises that force component interoperability:** Live training was something the Alliance did extremely well in the Cold War, but that skillset has atrophied to some extent. In that era, upon passing on the seas, it was *de rigueur* for ships from different nations to exchange classified

communications and join each other's datalink in an effort to ensure systems interoperability of their respective equipment. Today, the maritime and air components are re-learning the basics of passing the recognized air picture due to technological advancements in the components that were not synchronized during development, as well as due to an ever-growing process within the nations and the Alliance writ large for systems certification.

There is an ongoing effort to re-energize the basics, but the NATO Alliance frequently does live training at the component level only, and often overlooks the benefits of live joint level training. As an example of this, when is the last time NATO conducted an exercise where the maritime component fought to the beach under protection and coordination from the air; debarked and landed the amphibious force, which then conducted a transfer of authority to the land component, rather than re-embarking?

**A mindset shift is necessary**

Many of the items in this article are a mindset shift for many Nations of the Alliance. This is not to espouse that NATO should plan to fail in exercises, rather that NATO should seek to foster a training environment that permits high-intensity learning, to include "failing to induce adaptation to achieve success" as an acceptable method of learning. We need to move beyond the days when OPFOR is handcuffed in order to truly demonstrate the impact unexpected tactics from a peer competitor can have on a well-crafted plan. This is not a short-term proposal, but one that requires a hard look in the mirror and then acceptance of a need to change; otherwise we will continue to struggle adapting the highest levels of hard, challenging exercises to truly reflect what NATO might actually encounter against a peer who fights by a different rule set.

Finally, there is a balance which must be struck between "training" exercises and "certification" exercises. Various efforts are ongoing within the Alliance not only to streamline the exercise schedule, but also to synchronize it in such a way that they become mutually supporting, laying the building blocks for certification through one comprehensive scenario experienced as a campaign plan over the course of a series of exercises. This will go a long way



ABOVE: Italian Radar Unit supporting Exercise RAMSTEIN DUST II-17. The picture shows Italian AN/TPS-77 radar at its deployed site at Liepaja, right on the shores of the Latvian Baltic Sea coast. Photo by Kevin Lemée, AIRCOM.

toward satisfying the respective different experiences each component needs to see throughout their training cycle, which at times are in opposition. As an example of this friction, it has been expressed that the maritime and air components value the early stages of conflict in their training, as "fighting to get to the fight" is a skillset that must be retained and regularly exercised. However, this precludes the land component from simultaneously meeting their training needs, which occur a bit later in the campaign phasing.

**Conclusion**

This article addresses NATO's preparation and conduct in exercises against the threat posed by the modernization of the Advanced Layered Defence Systems of a potential near-peer adversary. These are unclassified observations of the behaviour and conduct of various Training Audiences across the Alliance and are neither intended to be extended to an assessment of preparation for actual operations, nor to provide an assessment of one particular weapons system's ability to operate against another, as

those observations would be classified. However, even at an unclassified level of discussion, there is much that can be gleaned from our current method of exercising and preparing to conduct each of NATO's three core tasks—Collective Defence, Crisis Management and Cooperative Security.

By improving our exercise programme, adapting to the concept that a near-peer adversary "gets a vote" and will do unexpected things that impact NATO's planning and execution cycle, improving our understanding of how to conduct operations in a degraded/contested environment, such as that presented by Advanced Layered Defence Systems (including improving our detailed Centre of Gravity analysis of these systems), will better prepare the Alliance for potential future operations.

NATO retains the advantage and will likely win scenario requiring the use of military force, but "losing less, while winning" is a matter of how well we understand our adversary; understand the impact of their systems on our systems, and how well we are able to operate in a joint manner, maximizing the efficiency of our resources and assets. †



NATO's TRIDENT JUNCTURE 2015, LIVEX (Live Exercise): Picture shows U.S. Marine Corps MV22s onboard HMS OCEAN. Photo by NATO





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Captain Perkins is the prospective Director of Fleet Operations (N3) for U.S. Seventh Fleet, homeported in Japan.

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# NATO and Strategic Communications

*"The role of information in our security has never been more important than now and the challenges to NATO and its values are crystal clear. We have a big job, but in the end, we will succeed because our story—the NATO story—is better. We just need to tell it right. We are all communicators now."*

by MARK LAITY  
 Director, Communications Division  
 Supreme Headquarters Allied Powers Europe (HQ SHAPE)



## The Story So Far



Allies at the 2009 NATO Summit recognised for the first time that Strategic Communications was an integral part of their efforts to achieve the Alliance's political and military objectives. General Curtis Scaparrotti, SACEUR (left), and General Petr Pavel, Chairman of the NATO Military Committee, during a joint press conference, 17 January 2018. Photo by NATO

litical and military objectives.” But, what that meant in practice was another matter.

Therein lies the vital importance of MC 0628, as the Alliance has struggled to deal with a tool and a concept—information and influence—that may be as old as Sun Tzu, but one that has been supercharged and transformed by cultural change and revolutionary technology. Before 0628, our efforts have been too often improvised, or the product of unresolved conflicts between the communication disciplines. There has been no lack of effort, and at times success, but the basis for sustained progress within the military structure has not been there.

So often in NATO headquarters, the annual staff rotation has seen massive spikes or dips in effectiveness due to variations in training, knowledge or willingness to cooperate within the communication disciplines. Too often individuals decided to go their own way and felt free to do so, or were helpless in the face of senior staff “who knew better”.

If all this sounds somewhat over-dramatic, it is not. In the ten years I was Chief StratCom, I saw this time after time. Meanwhile, so much of our effort was distracted by internal debate and, yes, sometimes they got personal. Most of the time though those in StratCom positions wanted consistent, clear guidance and we could not easily give it to them. I must emphasise again, much good work was done by many good people, and also progress made in pushing StratCom forward. Nevertheless, the lack of a baseline document held us back. We were too often arguing over yesterday's issues

dispensed with altogether. And, while the internal battle raged, externally, the information world kept changing and our adversaries kept moving forward.

**N**ATO'S LEADERS FIRST recognised the importance of StratCom in their Summit Communiqué of 2009, when they stated, “Strategic Communications are an integral part of our efforts to achieve the Alliance's po-

“It will never happen—never.” The statement was made with a tone of certainty. I remember the conversation last year with clarity. The “it” was MC 0628, the draft NATO Military Policy on Strategic Communications (StratCom), centrepiece of an intense struggle on how NATO communicates in the Information Age. StratCom mattered, and the comment reflected the strong feelings as well as arguments over StratCom and what it meant to those in the communication community, but the officer was wrong. A few months later, 0628 went through, approved by the Nations, and at last NATO's military finally have a policy fit for the challenges of a security environment in which information is a fundamental component.

**The struggle for MC 0628**

It was the culmination of a ten-year debate, where special interests, turf fights, principles, traditional thinking, old habits, and new challenges had clashed over what StratCom was, should be, how to do it—and, even, whether it should exist. Some even wanted the term

**PREVIOUS PAGE:** (from left) Mark Laity, the author; a press conference by the Commander of the Resolute Support Mission in Afghanistan, General John Nicholson; NATO Secretary General Jens Stoltenberg meeting the media outside the UN premises. Photos by NATO



Mark Laity, the author, speaking at the 2017 NATO Bi-SC Information and Communicators' Conference. Photo by Henry Plimack

instead of coping with today's problems and preparing for tomorrow's challenges.

In the end it was the Russian aggression in Ukraine that made the difference. In the 2014 Summit Communiqué, NATO's leaders stated, “We will ensure that NATO is able to effectively address the specific challenges posed by hybrid warfare threats. This will also include enhancing Strategic Communications.” In the face of the Russia's brutally effective use of Information Confrontation, the need was clear, resulting in the Military Committee tasking of 2015 that ultimately led to 2017's approved document.

We now have the baseline document that we needed in 2014. When I wrote for *The Three Swords Magazine* in 2015, I noted we were still arguing too much about StratCom and my frustration at the distance we still had to go to get it right. This is not to forget or downplay the StratCom response of so many individuals within Allied Command Operations (ACO) and the wider NATO, which was magnificent, as people rose to the occasion and improvised. However, in the end what we got in 2017 we could have had in 2013, because neither the arguments (nor the protagonists) had essentially changed in ten years of debate.

But late or not, we now have the essential start point for the next stage of the StratCom evolution. We also have to acknowledge that a policy is only as good as the plans that it catalyses, and of course plans are only as good as the implementation they enable and that are successfully put into effect. However, I feel confident about the fundamental soundness of the MC 0628, not just because the thinking and principles behind it are sound, but it is also a product of experience—empiricism is the partner of theory.

That experience, and the parent of much of MC 0628's contents, came from Afghanistan, where again an adversary exposed the inadequacies of our current information effort. Here again the dedication of our communication teams could not be faulted, but the results rarely matched the effort.

I was a part of all this with three Afghan tours between 2006 and 2010. It means I can criticise without accusations of hindsight or backseat driving precisely because I was a part of it—the successes, the failures, and the learning. It has been fairly common for critics and sometimes our commanders to complain the

Taliban were out-communicating us and although that wasn't always so, sometimes it was.

It was my first Afghan tour, in 2006-7, that in many respects pointed the way, both in highlighting the problems and the solutions. The ARRC-led ISAF IX of 2006 understood the communication challenge, and sought to face up to it, but never fully achieved the outcomes their insight deserved. By the time I returned I knew we were not fit for the communication fight. Our structures divided not united, our policies, doctrines and processes tended to marginalise communications both within the disciplines and from the wider headquarters. Our training was woeful with, too often, good people thrown in to learn on the job, trying to pick up skills unrelated to the common experience of most military officers.

Concepts such as Strategic Narrative were little appreciated, our ability to understand cultures, and how to speak to them even less so. The requirement for Information Effects (the StratCom term was little used then) could vary wildly from being a belated afterthought to unrealistic expectations of quickly

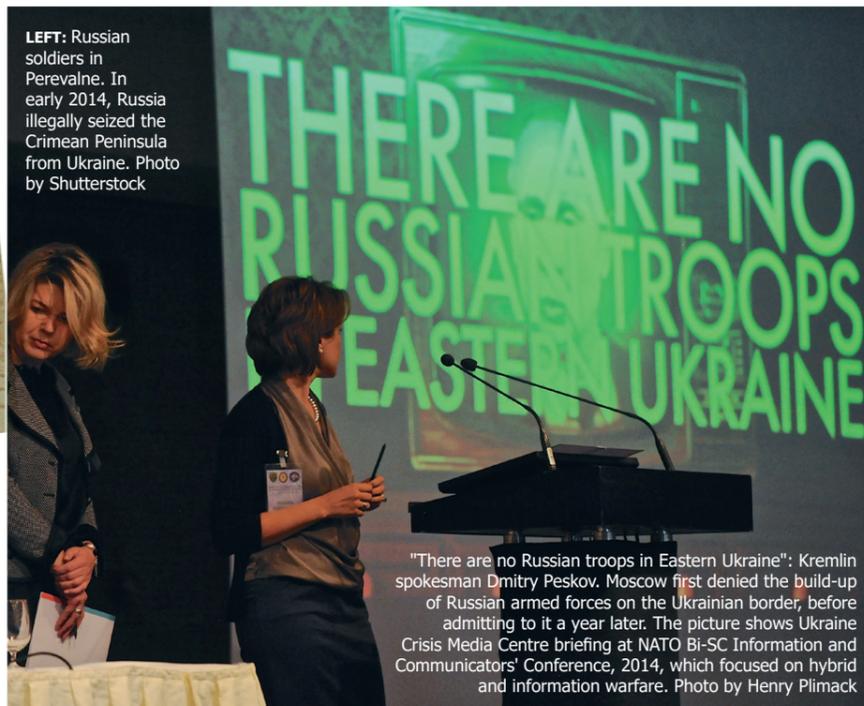
influencing unpalatable effects on the ground—what some wearily called “sprinkling more information fairy dust”.

When I went to Kabul, I had been SHAPE's Chief of Public Affairs, the first civilian to hold the post, but within a few months of my return, I was SHAPE's Chief Strategic Communications, the first StratCom position anywhere in NATO. The circumstances of the post's creation had been a little messy, and the job requirement was somewhat vague, but the timing was right, and the need for change was clear. And not just to me. I am proud to have played a part in advancing StratCom within NATO, but it was as part of a team. The ARRC left Afghanistan even more convinced of the value of StratCom, as did a succession of headquarters and individuals. They arrived in Afghanistan with the traditional approaches, and left with different attitudes and advocating reform. Existing policy gave little guidance, and often added quite a lot of confusion and contradiction to the movement for change, but



ISAF was one of the largest coalitions in history and is NATO's most challenging mission to date. At its height, the force was more than 130,000 strong, with troops from 51 NATO and Partner Nations.





LEFT: Russian soldiers in Perevalne. In early 2014, Russia illegally seized the Crimean Peninsula from Ukraine. Photo by Shutterstock

"There are no Russian troops in Eastern Ukraine": Kremlin spokesman Dmitry Peskov. Moscow first denied the build-up of Russian armed forces on the Ukrainian border, before admitting to it a year later. The picture shows Ukraine Crisis Media Centre briefing at NATO Bi-SC Information and Communicators' Conference, 2014, which focused on hybrid and information warfare. Photo by Henry Plimack

in my new post at SHAPE, I was in a position to help encourage and shape reform.

In doing so, this movement for change produced its "heroes", who helped lead the way, for instance, the Netherlands Lieutenant General Ton van Loon. Formerly Commander of Region Command South in Kandahar in 2007, he left persuaded of the centrality of StratCom, and when he became commander of I (German/Netherlands) Corps, he launched a systematic review of his Corps' structure and the outcome was the creation in 2010 of a Communication and Engagement Division that in most respects prefigured the structures now required by MC 0628.

At more or less the same time, ISAF was also undergoing radical change. The crisis in ISAF's fortunes in 2008-9 ultimately brought in General Stan McChrystal and amongst his changes was the creation of a Communication Directorate under a 2-star officer charged to "plan, coordinate, execute, and assess all Strategic Communication efforts, including Public Affairs, Information Operations and Psychological Operations throughout the Combined Joint Area of Operations".

In effect then most of the key principles and features of MC 0628, including the most controversial elements such as structures, were already a strong trend at the operational level in 2010. But there was no such agreement at the strategic and political/military level. Most knew there was a problem, but there was no agreement about the solution. Indeed, notwithstanding the 2009 Summit Communiqué quoted above, within the communication community there were still those who still

challenged the very notion of StratCom, with one country's department of defence even banning the term.

**UNTIL 2014 WHEN**, as outlined earlier, the Russian's effective use of information warfare gave NATO the same shock at the political-military level as a decade earlier the Taliban had shocked ISAF at the operational level. Reality bites, and the debate after Russia's aggression in Crimea and then Eastern Ukraine took on a very different tone.

It quickly became evident the Russians were using the information line of effort to disrupt, deceive, delay and dismay. It could be trolling; disinformation; information smoke-screens and lies about Spetsnaz, false narratives to scare, mislead or control, taking down or controlling cell net towers. What was also clear was that the Russian use of information was not some add-on or improvised effort, but a fully integrated part of their overall strategy. If we had needed evidence we were in a new world, we had it. Now we are learning to live with the consequences. MC 0628 is one piece—but only one piece, however essential—of the puzzle we now have to solve to ensure StratCom reaches its potential to help the Alliance.

### The 21st century Information Age and security

To adapt the old saying, there is nothing new under the "Sun Tzu", and it is both true and a cliché to say that the principles of war are enduring in their application. However, if the principles still apply, then the circumstances of their application do change, oftentimes to transformative effect. Thus, the bow and arrow, howitzers, and fighter-bombers are all forms of indirect fires, but of course, they were also all revolutionary technologies that changed the nature of warfare.

The same applies to information technology. I make no apologies for repeating a quote from Napoleon whose use of propaganda was masterful and is reputed to have said, "Four hostile newspapers are more to be feared than a thousand bayonets." How much more to "be feared" is the omnipresent smartphone?

The doyen of communication theorists, the Canadian Marshall McLuhan, is best known for predicting the nature of the media age when he said, "the medium is the message", but more relevantly for this article, he said in 1970, "World War III is a guerrilla information war with no division between military and civilian participation." He was thinking more



The Economist magazine featuring Vladimir Putin on cover and headline "A Tsar is Born", 28 October 2017. Photo by Hadrian, Shutterstock

### The aftermath of Russia's aggression in Ukraine not only accelerated the development of StratCom within NATO, it also belatedly focused attention on Russia's defence policies and thinking.

about Vietnam, but I would suggest the technology of the internet has brought such statements to maturity.

The traditional view of the Russian military is as stolid, unimaginative and just following orders, but this stereotype has always been something of a caricature that disguises some deep thinking about the art of war, especially at the operational and strategic level. I think this applies to their thinking about the nature of modern conflict, and for the purposes of this

article, their awareness of the information line of effort as integral to the overall strategy.

Of course, the Russians are not alone in recognising this, at least theoretically, and in the West most of us are familiar with DIME: Diplomatic; Information; Military; Economic, and PMESII: Political; Military; Economic; Social; Information; Infrastructure. However,

BELOW: Journalists of the state-owned "Russia Today" TV Channel. Photo by Goga Shutter, Shutterstock. General Gerasimov, Russia's Chief of the General Staff, wrote on modern warfare in 2013, "the new means of conducting military operations have appeared that cannot be considered purely military."



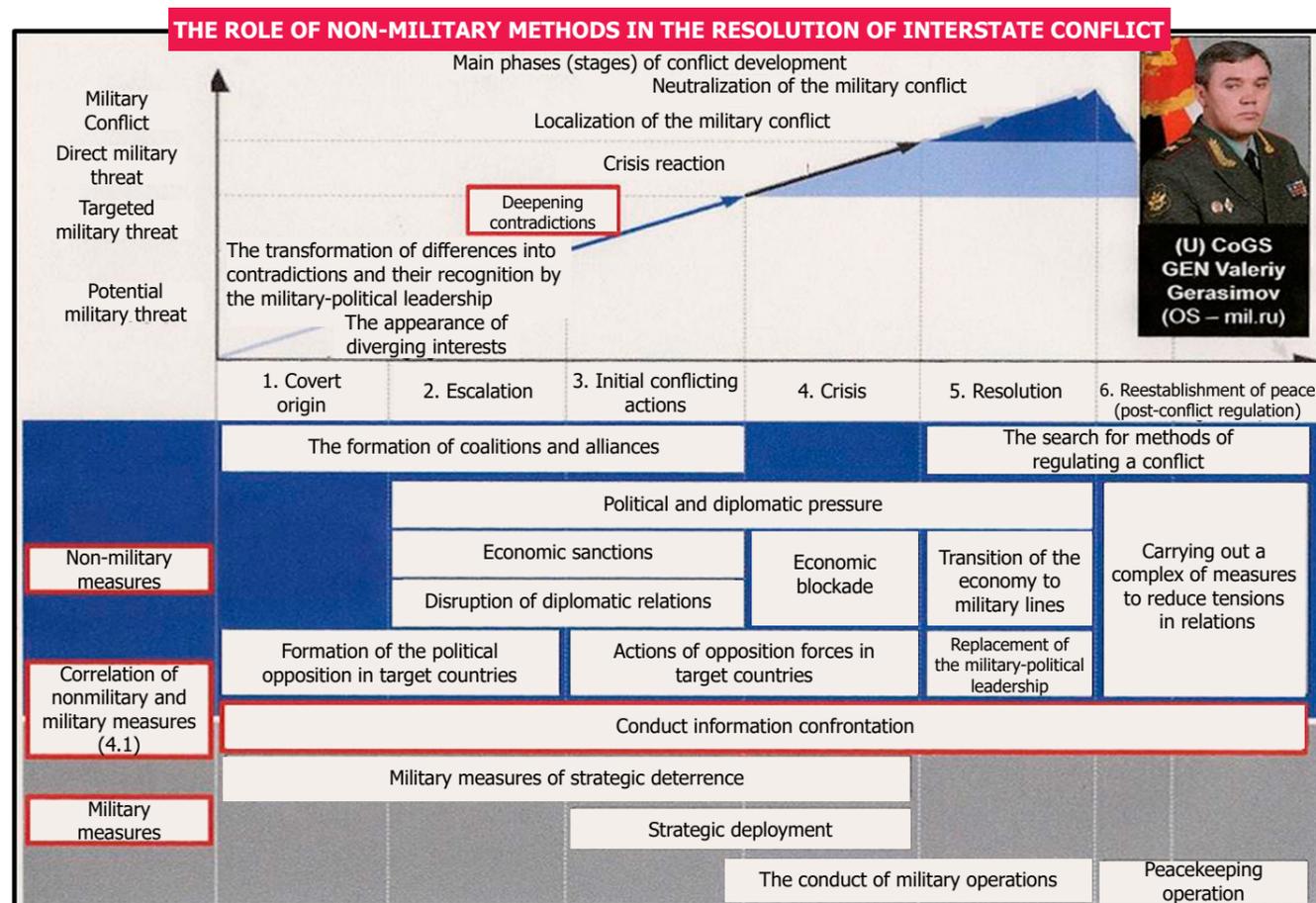
too often that theoretical acknowledgement has been more lip service than real implementation. What we saw in Crimea in 2014 was such thinking being implemented, especially in the information environment. Thus, when the Russians inserted their Special Forces into Crimea, they disguised their entry with what Churchill might have called a "bodyguard of lies".

Putin himself played a full role stating in March 2014 those Spetsnaz were "local militia" before casually admitting to the lie a year later. They isolated Crimeans from outside information sources, while at the same scaring them with lies about the imminent arrival of Ukrainian fascists, cleverly playing upon old narratives of the Patriotic War.

The Russians saturated the internet with disinformation and the ultimate effect and intent was, in military terminology, to get inside our decision-making cycle so that by the time we really knew and agreed on what was happening, it was too late, and the Kremlin was in full control of Crimea. Of interest was that quite consciously the Russians wanted minimal violence in the takeover knowing that the more the violence, the more the West would react.

The same tactics were tried to initial effect in Eastern Ukraine, but the shock effect had worn off and the response of both other countries and Ukraine also showed that the information line of effort is not enough on its own if the other objective circumstances are not also sufficiently aligned. Critically they underestimated Ukraine, the same narratives and desires that had driven the EuroMaiden—itself an in-





ABOVE: The Gerasimov slide, showing the six phases of conflict.

formation warfare battleground—produced an upsurge of determination and courage that allowed Ukrainians to improvise a response to the Russian-supported rebels in the East. Ultimately Russia, which had sought to minimise both the violence and its footprint in Crimea, had to use considerable violence using conventional Russian forces to freeze the conflict.

The aftermath of Russia's aggression in Ukraine not only accelerated the development of StratCom within NATO, it also belatedly focused attention on Russia's defence policies and thinking. What it showed was that we should have been less surprised than we were because what the Russians did they had been talking about for years.

Much of the public Western discussion has had as its starting point the so-called Gerasimov slide. General Gerasimov, the current Russian Chief of the General Staff, wrote an article in the *Military-Industrial Kurier* of February 2013 in which he stated among other things, "new means of conducting mili-

tary operations have appeared that cannot be considered purely military." The article was illustrated with the now famous slide showing the six phases of conflict from covert beginnings to a victorious peace. For our purposes, of most interest is the box labelled Information Confrontation. It is the only box which covers all six phases of conflict and also straddles both non-military and military measures. In other words, it is omnipresent.

It would be a mistake to regard the much-debated article as laying out how the Russians planned to conduct what we call hybrid conflict. Rather it was looking ahead and providing an analysis of the trends for future warfare; in other words how warfare would be conducted by everyone, including us. But, if this is how future conflict will unfold then those implementing it will of course include Russia. The article is in many, but not all, respects something of a tick-box for what actually happened in Ukraine and is going on elsewhere.

The article's content is also far from an

outlier, and is mirrored in multiple articles in other Russian journals, and also reflected in Russia's 2014 military doctrine, which stated, "Characteristic features and specifics of current military conflicts are: a) integrated employment of military force and political, economic, informational or other non-military measures implemented with a wide use of the protest potential of the population and of special operations." Again, the doctrine's analysis of modern conflict is not specific to Russia, but does reflect to a large degree its actions in practice.

The pre-eminence of Information Confrontation in Russian thinking for future conflict was further highlighted by General Gerasimov in March 2017, when he stated, "The army operating concepts of the leading states postulate that achieving **information dominance is an indispensable pre-requisite of combat actions** (my highlighting). The means of mass media and social networks are used to perform the set tasks."

Of course, Sun Tzu, highlighting that



**STRATCOM PRINCIPLES**

- All activity is founded on NATO's values.
- Activity is driven by Narrative, Policy and Strategy.
- Credibility is a vital asset and must be protected.
- Words and actions must be aligned.
- The Information Environment must be understood.
- Communication is a collective and integrated effort.
- Focused on achieving (a) desired effect(s) and outcome(s).
- Empowered communication at all levels.

**PERCEPTION BECOMES REALITY:** The "Mouth of Truth" (Bocca della Verità), is a marble mask in Rome, Italy, which is said to bite off the hand of anyone not telling the truth.

ABOVE: 2017 was the third anniversary of the illegal annexation of Crimea. Picture shows inauguration of the new premises of the NATO Representation to Ukraine by NATO Secretary General Jens Stoltenberg and the Vice Prime Minister for European and Euro-Atlantic Integration, Ivanna Klymush Tsintsadze, 10 July 2017. INSET: Jens Stoltenberg presents certificates to the Ukrainian Team participating in the Invictus Games. The word "Invictus" is Latin for "unconquered" and embodies the fighting spirit of the servicemen and women who became wounded, injured or ill fulfilling their duties on the battlefield. (invictusgames.in.ua/en). Photos by NATO

means may change, but principles endure, has something relevant to say, noting, "Thus, it is that in war the victorious strategist only seeks battle after the victory has been won, whereas he who is destined to defeat first fights, and afterwards looks for victory."

Indeed, one of the current discussions in Russian defence debates is whether the effective use of non-military measures may not just make victory in conflict inevitable, but render actual fighting unnecessary to achieve your aims. Or, as good old Sun Tzu might put it, "... supreme excellence consists in breaking the enemy's resistance without fighting."

Looking at the history of the Soviet Union perhaps helps explain the way they are thinking about future conflict. Much of what we see now is using today's technology of the internet to update the Information Confrontation tactics of the Cold War. This included routine use of disinformation and deception, for instance, the notorious KGB Operation *Infektion* in the late nineteen eighties, which claimed the U.S. was responsible for the creation of HIV/AIDS as part of a biological

weapons programme gone wrong.

Such information activities were an intrinsic part of Soviet "Active Measures", which covered a range of activities from disinformation through subversion to political assassinations, political warfare, media manipulation, foreign election-rigging and "special actions" involving various degrees of violence. The aim of Active Measures included creating disruption and discord among NATO and its Allies. It was taught at the KGB's Andropov Institute near Moscow, one of whose graduates was, as a young KGB officer, President Putin.

Compared to television, radio and newspapers, social media and internet naturally enhance the features of Soviet-style Information Confrontation. For instance, it is easier to stay covert; the cost of information technology has plummeted enabling saturation tactics; it is possible to bypass intermediaries to go direct to your target audience; smartphones are omnipresent making information activities far more powerful, and in an era of distrust then disruptive narratives are far more potent.

Just as the Kremlin has updated its Cold

War playbook and drawn upon its lessons then, even accepting we are not in a new Cold War, NATO too can look back and potentially learn. Our first SACEUR, General Ike Eisenhower was a strong proponent of the power of information and the necessity to compete in this arena.

What has changed is that the Cold War was a clash of ideologies, between communism and liberal democracy, with their concurrent narratives. The modern Russia has no such positive-sounding narrative to offer, but is more the disruptor, seeking as the Soviet Union also did in the Cold War, to exploit the differences and discords within the West. It would be a mistake though not to understand that the conduct of Russia's Information Confrontation is in support of an overall grand strategy. It is also worth noting that Russia is not the only body that is exploiting the new information environment. China, typically taking the long view, approved in 2003 its "Three Warfares" (*san zhong zhanfa*), comprising Strategic Psychological Warfare, Media Warfare and Legal Warfare.



In a different league, and a direct enemy of NATO, are terrorists such as ISIS, who in practicing asymmetric warfare regard information as a critical tool. Their strength has been exploitation of social media and in particular their understanding of culture and narrative for their target audiences. They have also proved creative at times, for instance, when advancing upon Mosul, they used social media posts to create panic among Iraqi forces in the city.

**Managing the new information environment**

As outlined above, we face a formidable challenge to compete in this arena. There is no doubt, we in NATO, are now taking StratCom with a level of seriousness significantly greater than before. For instance, one major step forward was the creation of the StratCom Centre of Excellence in Latvia, variously as a centre of thinking, expertise, mentoring and promotion, while also further linking us to the wider communication community outside the military.

As noted in the first section, MC 0628 also gives us a clear roadmap, and importantly ends some of the internal disputes that distracted us from our external challenge. Along with that has come some growth in terms of people, training and budget.

But is it enough? If, as General Gerasimov posits, “information dominance is an indispensable pre-requisite of combat actions,” then the level of resources required, whether in training, organization and thinking, is significant. Having just declared Cyber as a domain of operations then arguably information should



Russia's over \$4 billion-focus on computer technology, the Skolkovo Innovation Centre, which is a high technology business area near Moscow, Russia. Some refer to it as Russia's Silicon Valley. Photo by Shutterstock

also be one. Interestingly Russia sees cyber more as a tool of the wider information effort.

In looking at rising to this challenge then certain principles stand out. One is to recognise that NATO and its military can only do so much. Success in the information battle is part of an overall effort of which the military provide some but not all of the tools. As the Gerasimov slide shows, there are many elements contributing to success in the current security environment, most of them outside the Alliance's control. They also requiring action well before the immediate run-up to actual fighting that is NATO's forte. The line between conflict and peace is very blurred. In this context then NATO must be an integral part of a wider team, partnering not just with NATO's Nations but institutions like the European Union (EU).

That net also needs to go wider still. One lesson of the last few years has been the effectiveness and impact of civil society. It is no exaggeration to say that at the height of their crisis it was groups like the *Ukraine Crisis Media Centre* and *StopFake* that brilliantly carried the main burden of Ukraine's communication effort. But we, with all our resources, have hugely benefitted from the independent efforts of groups like *Bellingcat* and the *Atlantic Council* as well as individual experts. Not only did they bring expertise they also brought credibility. Whether deserved or not, we live in an age of distrust of institutions and they are more trusted than we. We should also be aware that it is the very diversity of our societies that is one of our major strengths in terms of both values and quality. In a very real sense they are ambassadors for what we stand for and we need to work together.

Those values are at the heart of successful StratCom, and indeed the key section of MC 0628 is the list of StratCom principles, and the first is, “All activity is founded on NATO's values.” This is no mere political statement because relying on our values as a start point produces a cascade of critical StratCom activity.

Those values for instance enable the generation of our narratives, and narratives are what drive both individuals and groups. As Daniel Kahneman, a Nobel prize winner for behavioural psychology and author of *Thinking Fast and Slow* stated, “No-one ever made a decision because of a number. They need a story.” Further, a narrative is an organizational scheme expressed in story form and stories are

**StratCom success is based on gaining support for our story, not knocking down theirs or getting immersed in essentially tactical action.**

often the basis for community identity as well as strategies and actions. Having values that resonate—speaking to the heart as well as the head—with audiences are also essential to the credibility that is needed to make others listen, engage and ultimately support. That support must then be sustained. That mutually supporting triangle of values, narrative and credibility is the basis for successful StratCom.

In the face of the trolling, disinformation and lies of our adversaries and rivals it is all too easy to get distracted from the basics, and to spend our time reacting. However, over-focusing on this by definition gives them the initiative. Further, while in the Cold War Russian disinformation operations were often elaborately planned, now they mostly rely on quantity not quality. As shown by the multiplicity of false stories put out by the Russians to hide their responsibility for the shooting down of the MH17 airliner, if you knock down one story another will quickly follow.

This is not to say we can ignore what our adversaries say, but to pick and choose what we respond to and always emphasise the need to take the initiative. In the end, StratCom success is based on gaining support for our story, not knocking down theirs or getting immersed in essentially tactical action.

**D**EVELOPING A NARRATIVE is no easy task and one that requires time and resources and too often the need is realised too late as we are deep into the crisis before such work is underway. This is a good area for contingency planning. Notably to develop a story requires an understanding of the audience and the information environment, and this has been one of our weaknesses. In many of our conflicts our grasp of culture, understanding of the audience and general awareness of the environment has been lacking, and we have paid the price in our inadequacies in gaining and maintaining support.



#WEARENATO  
29ALLIES

To learn more about NATO, please visit <https://www.nato.int/cps/en/natohq/news.htm>

The use of big data (think Google Analytics) promises much but effective Information Environment Analysis (IEA) is still somewhat elusive. This is a key area of current work. But, if the story is so central, then that narrative must be integrally linked to our strategy, which in turn must align words and actions to sustain the credibility that makes our audiences take notice. In helping create that Strategic Narrative, NATO has developed one very effective tool, the StratCom Framework. The Framework integrates communication and mission objectives and gives Direction and Guidance on the situation, objectives, themes, focus topics and coordination—a kind of StratCom mission command linking all levels.

This alignment of strategy, action and communication is central to achieving success. It is noticeable that for all the apparent randomness and outpouring of disinformation the Russian information effort is focused. For instance, they have different narratives for different countries, maintain their strategy of wedge-driving to create and exploit discord within Europe, and all this is done to support clear aims, including to especially influence their neighbours and critical areas such as the Middle East, while securing an information bastion within Russia. Sometimes where it appears the West is losing the StratCom struggle it is not tactics, techniques and procedures that are the problem, but

a lack of certainty about what we want or a lack of unity about our aims. Without a clear story or strategy, we are vulnerable and will find it hard to set, let alone achieve, desired communication effects and outcomes.

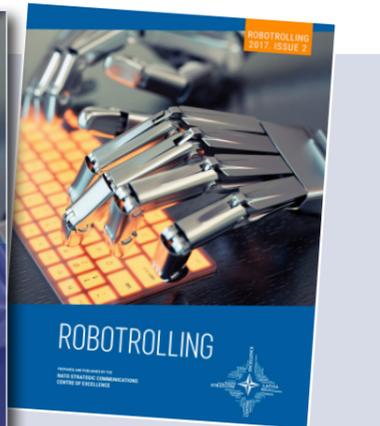
We have also found it hard to truly empower our people. If one thing is clear about our Information Age is that everyone is now a communicator and want to engage with their peer groups not listen to us. It means our best communicators are not formal spokespeople, but our soldiers, sailors and airmen and women who have a credibility more senior people do not. We need to use them—in the cacophony of modern communication we need lots of voices and to live with the fact sometimes they will say the wrong thing. Indeed, this reflects the central aim of StratCom, which is to create the mindset where we recognise we are all communicators in some form, whether planning or conducting operations, and knowing everything we do is sending messages, so we need to be conscious what they are and what we are trying to say.

The role of information in our security has never been more important than now and the challenges to NATO and its values are crystal clear. We have a big job, but in the end we will succeed because our story—the NATO story—is better. We just need to tell it right. We are all communicators now. ✦

**DID YOU KNOW?**

84%

Every two out of three Twitter accounts posting in Russian about NATO's operations are not real people but automated 'BOTS', responsible for 84% of all messages.



LEFT/ABOVE: NATO StratCom Centre of Excellence, "Robotrolling 2017/2" can be downloaded at the following link: <https://www.stratcomcoe.org/robotrolling-20172>





Major General Rob Magowan, the Commandant General of Royal Marines, talks with the participants of Amphibious Leaders Expeditionary Symposium, 22 November 2017, at NATO Maritime Headquarters in Northwood, United Kingdom. Photo by Staff Sergeant Marcin Platek

# COMMITMENT TO ALLIED MARITIME EXCELLENCE



Marines assigned to U.S. Marine Forces Europe and Africa disembark from the Polish minelayer-landing ship "ORP Krakow" during BALTOPS 17, the premier annual maritime-focused exercise in the Baltic Region and one of the largest exercises in Northern Europe. Photo by Jessica Dupree, U.S. Navy



## NATO leaders discussed key points ahead of amphibious leaders' expeditionary symposium at Joint Warfare Centre in June

by STAFF SERGEANT MARCIN PLATEK  
Communication Strategy and Operations  
U.S. Marine Corps Forces, Europe and Africa



More than 30 maritime and amphibious experts from across Europe and the United States converged on Allied Maritime Command Headquarters in Northwood, United Kingdom, from November 21 to 22, 2017, to develop a way forward and continue the efforts to enhancing amphibious support to NATO. The progress made in Northwood will inform the fourth iteration of Amphibious Leaders Expeditionary Symposium (ALES), which will take place at the Joint Warfare Centre (JWC), Stavanger, Norway, in June 2018. "The consensus of ALES is to continue the dialogue and continue the pressure, because [Supreme Allied Commander Europe] realizes that the nirvana is a NATO fully-formed, fully-functioning, and fully-staffed headquarters, but he realizes that there are other intermediate steps and that there is no plan of action or milestone that is nicely and neatly laid out," said U.S. Marine Corps Major General Russell Sanborn, Commander of U.S. Marine Corps Forces, Europe and Africa, the leading command behind the ALES initiative. "The consensus [of ALES], the one-liner, that we can all agree on is the shining light at the end of the tunnel."

During the conference, representatives of eight different Allied Nations and four different NATO commands deliberated on a myriad of topics ranging from interoperability, Collective Defence, readiness and response, and most importantly, the Command and Control (C2) of multi-national amphibious forces during large-scale NATO operations.

"Collective Defence in Europe is about assurance," said U.S. Marine Corps Major General Niel Nelson, the previous Commander of U.S. Marine Corps Forces, Europe and Africa, who led the first two iterations of ALES. "In NATO, being under Article 5, every-

one comes together, and to come together you need to interoperate. To interoperate you need to know how to do that. This [event] tells us how to do that from the amphibious nature. So, [we have] multiple countries and multiple ships, talking at sea and bringing their forces together and delivering that capability ashore gives us not only the deterrence we are looking for, but also the assurance that we can do it."

ALES originated two years ago as a forum for senior amphibious leaders to discuss key aspects of combined amphibious operations, with a focus on addressing future threats. The first symposium was held in October 2016, in Stuttgart, Germany, home to U.S. Marine Corps Forces, Europe and Africa headquarters.

During this in-depth self-assessment and examination, senior leaders recognized the need to synchronize and improve the overall C2 structure to better operate as a command under the warfighting organization and improve the employment of organic capabilities. "Amphibious operations are difficult—they take time, they take effort, and they take people to think about the different stress points and work through it," said Nelson. "Improving the interoperability of Allied maritime forces will

prove of immense benefit in the years to come."

These conversations spearheaded planning efforts that enabled the execution of a Table Top Exercise (TTX) during the second iteration of ALES, which took place in June 2017, in Naples, Italy, home to Allied Joint Force Command Naples. The TTX validated joint-amphibiousness as a crucial warfighting discipline that must be a fully-interoperable part of a multi-national maritime campaign. Symposium participants were able to provide their inputs from their current national and command roles, but also were able to step outside those roles to help objectively examine the employment of the overall NATO multi-national amphibious force.

"We certainly know we are stronger together and that Collective Defence starts with understanding that United States' commitment to Article 5 is ironclad and that it is 29 for 29," said U.S. Navy Vice Admiral Christopher Grady, the Commander of U.S. Navy 6th Fleet and Naval Striking and Support Forces NATO, who participated in the second ALES iteration in Naples. "ALES brings all those folks in the right room to talk about that collective security and that Collective Defence."



Participants of the symposium discussing NATO maritime security in order to enhance amphibious support to NATO. Photo by SSgt. Marcin Platek



Vice Admiral Clive Johnstone, Commander of NATO Allied Maritime Command at Joint Warfare Centre. Photo by JWC PAO





ABOVE: NATO Response Force/Maritime 2018. All photos by MARCOM (WO Artigues and CPO Valverde)

**D**URING THE SYMPOSIUM, participants worked hand-in-hand with each other, as well as with military think tanks and retired, emeritus senior advisors. Ultimately, consensus was reached that a prospective NATO maritime and amphibious task force would be an incredibly powerful and flexible capability for NATO reassurance, deterrence, and enhanced defensive operations. “We are looking at how we are doing active deterrence,” said Royal Navy Vice Admiral Clive Johnstone, the Commander of NATO Allied Maritime Command, where the Northwood seminar was hosted. “That is speed and that is maneuver, this is where ALES will play and how we get the heavy end of our forces moving quickly to

stop the enemy before they start moving.”

The goals of ALES are complementary to other Allied amphibious efforts such as the Allied Maritime Basing Initiative (AMBI) and the European Amphibious Initiative (EAI). AMBI envisions U.S. Marine Corps forces placed on Allied vessels, while EAI creates an environment where NATO-aligned forces work with other Partner Nations, such as Sweden and Finland, to build enhanced amphibious interoperability. Furthermore, ALES exemplifies the NATO commitment to further develop these capabilities, as stated under the 2014 Wales and 2016 Warsaw declarations.

“What we were able to do is achieve recommendations on the business of large-scale operations, so we are talking about amphibious

ous task force-level, and what they imply is that we need change, and that the construct we have right now does not fit the purpose, and hence we are on this journey right now,” said Royal Marines Major General Rob Magowan, the Commandant General of Royal Marines, and co-host of the ALES seminar in Northwood. “We got to keep the dialogue and the momentum going, and the best way to do that is to run a meaningful war game or [rehearsal of concept] drill.”

The success of the symposium in Northwood, together with earlier successes in Stuttgart and Naples, has NATO leadership focused on keeping up the momentum and continuing the push toward sustained improvement in the area of amphibious interoperability. “One of the key aspects in changing the direction of NATO as being a force-projecting stabilization force to re-orient itself back on Collective Defence is that we need to get back together and restudy both the way which we interoperate with each other but also our doctrine and the way our equipment has moved forward,” said Royal Marines Major General Timothy Bevis, NATO Operations and Planning Division. “This kind of event is vital for bringing together the thoughts of leaders to understand how we will integrate and work together in the future.”

Bevis says that after a long concentration of working together overseas, NATO has to look forward on how to defend Allied territory, and if necessary, regain any Allied territory, which a peer might have taken, rather than fighting against insurgency in a less-sophisticated way like in the past 17 years.

The answer to this will be continued to be developed and elaborated upon in the future ALES iterations like the one taking place at the JWC, Stavanger. In Norway, this June, leaders will look to connect outputs from the ALES seminar in Northwood and build toward desired results that reassure all NATO Allies of the uncompromising commitment to Collective Defence, as well as testing agreed-upon outputs during future NATO exercises. “If you look around the room here, all different uniforms, but we all come with naval institute backgrounds,” said Sanborn. “Even though we all speak different languages, we are all subject matter experts in this room. This partnership is a thing of beauty. We might not have all the answers right now, but this ‘center of excellence,’ this group, will figure it out.” ✦

## JWC WELCOMES NEW SPECIAL ADVISOR



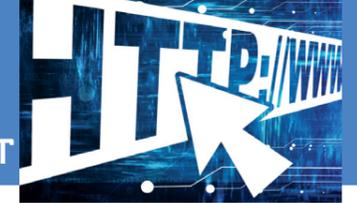
### Brigadier General Kurt Pedersen



Royal Norwegian Air Force Brigadier General Kurt Pedersen assumed the position of Special Advisor to Commander Joint Warfare Centre (JWC) on 4 January 2018. Brigadier General Pedersen comes to the JWC following his assignment as the Deputy Commander of the Norwegian Armed Forces Cyber Defence, where he served since 15 February 2017.

Brigadier General Kurt Pedersen was born in 1960. He joined the Royal Norwegian Air Force in 1980, upon completion of the Air Force Basic Officer Training School in Stavanger with branch specialization in Air Command, Control and Early Warning. In 1987, he graduated from the Royal Norwegian Air Force Air War Academy in Trondheim.

Brigadier General Pedersen’s previous NATO assignments include Staff Officer, NATO Airborne Early Warning and Control Force Command (NAEWFC) in Mons, Belgium (1994-1997); Branch Head Education, Joint Education and Training Division, Headquarters Supreme Allied Commander Transformation (HQ SACT), Virginia, United States (2005-2007); and Deputy Assistant Chief of Staff (DACOS) Joint Education, Training and Exercises (2009-2010), HQ SACT.



## TRIDENT JUNCTURE 2018



### Commander Robert Stover, JWC’s Scenario Management Section Head, talks us through TRIDENT JUNCTURE 2018 scenario wargame

NATO’s Joint Warfare Centre (JWC) hosted 3 to 5 October 2017 a wargame to test a new training scenario, OCCASUS, which will be used for the first time in exercise TRIDENT JUNCTURE 2018 (TRJE18).

#### AIM

The aim of the wargame was to ensure that the new setting and its associated scenario were sufficiently rich, accurate and logical to support the exercise and training objectives of the TRJE18’s various Training Audiences.

#### FOCUS AREAS

The three perspectives that were explored at the wargame were: (1) defining operational activities of the fictitious Opposing Forces; (2) discovering potential reactions of participating Host Nations to various scenario threads; and (3) identifying potential dynamics created by the scenario for the operational and strategic levels of the NATO Command Structure and the greater international community. Only the second of its kind in recent JWC history, this scenario wargame successfully merged the perspectives of all stakeholders into one coherent storyline. It also, and more importantly, identified information, scheme of manoeuvre and operational dilemma gaps that will require further definition in the coming months.

BELOW: The wargame in Stavanger involved key trusted agents from across the TRJE18 Training Audiences as well as Subject Matter Experts from across all disciplines within the JWC. Photos by JWC PAO



#### OUTCOME

What began as a forum for targeted testing of a new setting and scenario resulted in an intense three-day miniature exercise and established a solid foundation for success in all other TRJE18 exercise events. The exercise planners received valuable advice, direction and guidance as they begin the next phases of exercise development.



# NATO Force Integration Unit ESTONIA Enhanced Forward Presence

by WING COMMANDER MARK ATTRILL  
Royal Air Force  
Deputy Commander and Chief of Staff  
NATO Force Integration Unit Estonia (NFIU Estonia)

## Enhanced Forward Presence

\* NATO has enhanced its presence in the eastern part of the Alliance, with four multinational battlegroups in Estonia, Latvia, Lithuania and Poland. These battlegroups, led by the United Kingdom, Canada, Germany and the United States respectively, are multinational and combat-ready, demonstrating the strength of the transatlantic bond. Their presence makes clear that an attack on one Ally will be considered an attack on the whole Alliance. NATO's battlegroups form part of the biggest reinforcement of NATO's Collective Defence in a generation.

\* Approximate total troop number for all four battlegroups (as of November 2017) is 4,762. [www.nato.int/factsheets](http://www.nato.int/factsheets)

**A**S WE APPROACH the second anniversary of the declaration of our Initial Capability, and the first anniversary of the arrival of the lead elements of NATO's Enhanced Forward Presence (eFP) here in Estonia, it is a good time to report on progress with the capability development of these two relatively new NATO entities. As many readers may know, the NATO Force Integration Unit (NFIU) initiative formed part of requirement to improve Alliance responsiveness to counter the threat from an emerging number of actors including Russia, and to form an integral part of NATO's Readiness Action Plan (RAP) as it began preparations for the delivery of Graduated Response Plans (GRPs) to take account of threats to the NATO Alliance and its constituent members. Several frontline states of NATO, which included the three Baltic States, Poland, Bulgaria and Ro-

mania, established small headquarters-style units, now known as NFIUs, to facilitate the rapid deployment of a NATO force known as the Very High Readiness Task Force (VJTF), or any other Allied force.

The NFIU concept was formally approved by NATO Defence Ministers in February 2015, and the original six NFIUs have now been joined by two others, established in Hungary and Slovakia. Less than a year after the Wales Summit, on 1 September 2015, the North Atlantic Council (NAC) took the formal decision to activate the first six NFIUs as part of the NATO Force Structure and by this time it had also been agreed that the first wave NFIUs would be required to declare Initial Capability in January 2016. The initial concept for setting up an individual NFIU rested on the following fundamentals: First and foremost, the NFIU was to act as a visible, permanent and persistent NATO presence within each of the nations.



Prime Minister of Estonia, Mr Jüri Ratas, and NATO Secretary General Jens Stoltenberg at Tapa Army Base, Estonia. **Opposite:** enhanced Forward Presence (eFP) forces at Tapa manoeuvre camp in Estonia and Adazi military base in Latvia. Photos by NATO and Miks Uzans, NATO Channel



Wg Cdr Attrill, the author, at the main entrance of NFIU Estonia headquarters. Photo by SAC Edward Wright, MoD UK

Further, the NFIU should be joint in nature to reflect the role of each service (air/land/maritime) in contributing to any VJTF, and it should be multinational to demonstrate NATO's collective responsibility for delivering security to each Member State. Since each of the NFIUs had been requested by the Host Receiving Nation, they should also be affiliated to their respective Defence Force Headquarters and tailored to local circumstances. In the case of Estonia, the adaptation has been particularly effective with the Unit attaining a very Estonian atmosphere where interoperability with our "parent" headquarters, and the Ministry of Defence, in particular, has been extremely effective.

Every military organisation and entity has a mission statement and NFIU Estonia is no exception. In our case, the initial mission statement was, and remains, "to facilitate the rapid deployment of the VJTF and additional high readiness and assurance elements in or-



## NATO FORCE INTEGRATION UNITS

\* During the 2014 Wales Summit, NATO Heads of State and Government agreed to implement the biggest reinforcement of NATO's Collective Defence, including an Enhanced Forward Presence in the eastern and southeast part of Alliance territory and a framework for NATO's adaptation in response to growing challenges and threats emanating from the south.

\* To reinforce the readiness and the rapid deployment of these forces, NATO Allies set up eight NATO Force Integration Units (NFIUs) in Bulgaria, Estonia, Latvia, Lithuania, Poland, Romania, Hungary and Slovakia.

\* All eight NFIUs are part of NATO's Readiness Action Plan, or RAP, that was agreed at NATO's Wales Summit in 2014.

\* RAP, in turn, is part of NATO's response to the evolving security challenges following

Russia's illegal annexation of Crimea and ongoing aggressive actions in eastern Ukraine.

\* The RAP includes "Adaptation Measures" which are longer-term changes to NATO's forces and command structure so that the Alliance will be better able to react swiftly and decisively to sudden crises.

\* Adaptation Measures include tripling the size of the NATO Response Force (currently, 40,000 troops), the establishment of a Very High Readiness Joint Task Force (VJTF) able to deploy at very short notice, and enhanced Standing Naval Forces.

\* NFIUs play a major role in NATO's defence and deterrence posture, ensuring the Alliance remains ready, relevant and adaptive.

\* The British Army is leading a battlegroup of about 1,000 NATO troops in Estonia.



NATO Secretary General Jens Stoltenberg visiting the headquarters of NFIU Romania with Prime Minister Klaus Werner Johannis, and talking to staff, 2015. Photo by NATO



Ambassador Tacan Ildem, NATO Assistant Secretary General for Public Diplomacy, shaking hands with General Milan Maxim, the Chief of Staff of General Staff of the Armed Forces of the Slovak Republic, during the inauguration ceremony of NFIU Slovakia, 24 January 2017. Photo by NATO

**In developing the NFIU concept, much has been made of the RSOM task, which is often understood to be a logistics responsibility with the perception that the NFIU is a logistics unit. This is not the case.**

der to enhance Alliance responsiveness". As with any effective organization though, there is a regular requirement to review the mission, and as the NFIU has evolved over time and has been exercised and evaluated, it has become clear that our mission may be subjected to some change if we are to remain relevant in an ever-changing world.

In terms of Command and Control (C2), Headquarters Multi-National Corps Northeast (HQ MNC NE), home-based in Szczecin, Poland, is responsible for operational control of the NFIUs within its nominated Area of Re-

sponsibility, which includes the three Baltic States, Poland, and more recently, Hungary and Slovakia. As the proclaimed "NATO custodian of regional security", HQ MNC NE undertakes several tasks for which they rely heavily on the NFIUs. The HQ is under remit to maintain high levels of Joint Comprehensive Situational Awareness (JCSA), and NFIU Estonia has a key role to play in constantly updating a wide range of information relating to Estonia, with extensive coverage across the six functional domains encompassing Political, Military, Economic, Social, Infrastructure and Information (PMESII).

The maintenance of JCSA for Estonia is a major part of our daily work and information is disseminated to HQ MNC NE via a number of sources, including our regular reports and returns, site surveys and reconnaissance reports, Key Leader Engagement readouts and video tele-conferences. Linked to this work is a requirement to regularly update information on ongoing and future NATO assurance measures and in-country bilateral or multilateral training or exercise activities.

In all of this, NFIU Estonia has played a key role in filling information voids and then maintaining up-to-date situational awareness. Ultimately, the NFIUs work for SHAPE and

SACEUR, and although it is envisaged that we regularly work closely with Joint Force Command Brunssum through HQ MNC NE, SACEUR can also provide Direct Liaison Authority with Joint Force Command Naples or any other NATO Command Structure organization as the early planning for a potential NATO operation evolves. In order to conduct its main mission, NFIU Estonia currently has six main tasks, as directed by Allied Command Operations (ACO)/SHAPE. These main tasks are as follows:

1. Prepare and support the Reception, Staging and Onward Movement (RSOM) of the VJTF, and other NATO Response Force (NRF) elements at high readiness levels.
2. Support Article 5 operations, planning and exercises, including fostering coherence with national defence planning.
3. Support to Non-Article 5 operations, where appropriate, and agreed by Nations.
4. Coordinate and assist multinational training and exercises in relevant nations.
5. Prepare and support the sustainment of the VJTF, and other NRF elements.
6. Support the ongoing assurance measures, including preparing to receive and support the integration of forces into operational C2 and to enable the sustainment of combat

and combat support elements engaged in those assurance measures.

In developing the NFIU concept, much has been made of the RSOM task, which is often understood to be a logistics responsibility with the perception that the NFIU is a logistics unit. This is not the case. The RSOM task is an operational activity since it relates directly to the manner in which a commander will want to undertake his mission, so it is important that the makeup of the NFIU reflects the various demands that may be placed upon it in facilitating the RSOM process within a NATO deployment. For this reason, the NFIU possesses representation across all of the functional areas that are normally provided for in a "traditional" HQ. As a result, with a relatively small establishment of forty-one personnel in total, the NFIU would be unable to undertake a full planning role of its own accord, and this is reflected in our main tasks which call for, in primacy, a "supporting and facilitating role" with the relevant authorities from within the Host Receiving Nations.

Here in Estonia, in essence, the NFIU is to complement, and not complicate, the role of the Host Receiving Nation by providing additional staff support during a critical period in

the Crisis Response Planning phase of a potential operation or deployment.

So, how does the NFIU go about fulfilling its primary mission and tasks? First and foremost, NFIU Estonia is here to support

SHAPE and the Host Receiving Nation in identifying the shortfalls or surpluses in Estonia's enabling capabilities and capacities for the all important RSOM task in the widest possible sense, taking into account a wide variety of factors to enhance and maintain situational awareness on a daily basis to higher authority within NATO. This task includes environmental awareness to survey and report on the availability of assembly and training areas, main deployment and supply routes (air/land/sea) and locations to facilitate other support activities. The successful outcome of this work relies on the establishment and maintenance of a suitable network of contacts, whether these are with the Estonian Defence Forces, Ministry of Defence, other Government departments or other bodies, such as airport operators or port authorities. One of the most important tasks is to provide support and advice to HQ MNC NE, other NATO HQs and VJTF HQs and Units and to link them up with corresponding Host Receiving Nation organisations, headquarters and Units as part of our promotion of international cooperation.

The staff of the NFIU rely heavily on the national and regional expertise and advice provided by national authorities, principally the Estonian Ministry of Defence and Estonian Defence Force HQ Staff. NFIU staff

BELOW: British Prime Minister Theresa May visited Tapa Army Base with her Estonian counterpart Jüri Ratas and French President Emmanuel Macron on 29 September 2017. Photo by NFIU Estonia



members will, therefore, regularly attend co-ordination and planning meetings with their counterparts in the Ministry of Defence or the Defence Force HQ in recognition of a growing role in providing additional staff support, in particular for those activities that require a multinational input. Since our overall role is to comprehensively support and facilitate the deployment and employment of multinational forces, whether on exercise, or during times of crisis, it is equally important for the NFIU staff to regularly engage with other government departments or national entities engaged in Crisis Response Planning or management. NFIU Estonia membership of the Host Nation Support Steering Committee, an Ministry of Defence-led cross-government Crisis Response Planning and management body, is testament to the recognition of the NFIU's role in boosting national planning capabilities during a time of crisis, where further NATO assistance is likely to be called upon.

In terms of our responsibility to establish and maintain a local network of contacts, in order to assist with the deployment of multinational Force Elements, this particular activity recently came to the forefront following the decision during the 2016 NATO Summit in Warsaw, to deploy eFP Force Elements to the three Baltic States and Poland. As a result of the eFP initiative, NFIU Estonia worked extremely closely with both the Estonian Defence Force HQ and military authorities from the United

Kingdom (as Framework Nation for Estonia), Denmark and France, to facilitate and support the deployment of the eFP in early 2017.

The NFIU has also been tasked to assist HQ MNC NE with the fulfilment of their main tasks, which includes the maintenance of JCSCA in their Area of Responsibility and to monitor the deployment and employment of NATO Assurance Force Elements, U.S. Atlantic Resolve Force Elements and other bilateral and multilateral forces, whether they are on exercise, or maintaining a persistent presence within Estonia. As if to reflect the Joint nature of our overall mission, these assurance measures regularly include the enduring Baltic Air Policing Mission at Amari Air Base and maritime operations associated with exercises and operations in the Baltic Sea area.

Early work focused on the execution of our Implementation Plan, for which Estonia and NFIU Estonia were set a formidable task; to establish, develop and deliver an operational in-country capability for NATO in less than 12 months. It was quickly determined that five key areas would contribute to the delivery of an effective Implementation Plan: Command and Control, Standard Operating Procedures, Effective Reporting, Manning and Training and Exercises. Concurrent with the execution of the Implementation Plan was the requirement to carry out the primary NFIU Mission as outlined above, and to include the monitoring of ongoing assurance measures.



JWC's SKOLKAN scenario uses the Baltic Sea Region. Civil and military experts from the Estonian Defence Forces and the Ministry of Defence regularly support the TRIDENT Series of Exercises directed by the JWC. Pictured above is Colonel Aivar Kokka, Deputy Chief of Staff, Estonian Defence Forces, supporting the White/Grey Cell at JWC. Photo by JWC PAO

As previously mentioned, the NFIU Estonia Personnel Establishment was set at forty-one with a broadly 50 per cent split between national and multinational contributions. The first multinational member of staff arrived in July 2015, to be joined by a steady stream of both Estonian and multinational staff in the run up to the declaration of Initial Capacity in January 2016. As the staff numbers grew in the autumn of 2015, so we were able to build up our situational awareness on Estonia and to establish and maintain an effective network of contacts. We were also faced with the requirement to understand and report on an impressive number of defence related initiatives, which preceded the establishment of eFP and in doing so witnessed the arrival and employment of a wide range of military capabilities in all of the domains.

One of our biggest challenges was to tackle the training and exercise programme and how it would relate to the newly arrived staff. We had to take account of both individual and collective staff training if we were to achieve our aim of building an effective and cohesive unit in time to meet our Full Capacity evaluation and declaration in June 2016. It soon became clear that the speed at which the NFIU concept had been developed in NATO had created significant challenges for the broader training community, who were keen to use the "shiny new toy" but were not quite sure how!

Fortunately for NFIU Estonia, the NATO operational-level exercise programme during our first two years has provided sufficient training opportunities to allow us to exercise a major element of our role; even more fortunate is the fact that one of the baseline scenarios used for collective NATO training at the Operational level is that known as SKOLKAN, which has Estonia as a central component of a fictitious but evolving security crisis in the Baltic Region. The scenario and supporting documentation is owned by the Joint Warfare Centre (JWC) in Stavanger, Norway and has been used several times since our creation.

**O**N TWO RECENT occasions, Joint Force Command Naples (JFCNP) and the NATO Rapid Deployable Corps HQ, Turkey (NRDC-T) have sought the assistance of the NFIU to test and analyze their Operational Li-



Major General Andrzej Reudowicz presenting the JWC plaque to Wing Commander Attrill during a visit to NFIU Estonia, 17 August 2017. Photo by NFIU Estonia PAO

## Joint Force Command Naples and NATO Rapid Deployable Corps, Turkey have sought the assistance of NFIU Estonia to test and analyze their Operational Liaison Reconnaissance Team (OLRT) capabilities.

aison Reconnaissance Team (OLRT) capabilities during Exercise STEADFAST JUNCTURE 2016 and EURASIAN STAR 2017, respectively. In spite of the fictional nature of the overall scenario, NATO Nations have to be accurately represented, so the data for Estonia was as "real world" as it could be, in terms of place names, facilities, population makeup, etc.

During the Crisis Response Planning phase of an exercise (or operation) the Joint Force Commander's OLRT will deploy to the potential area of operations to gather real time data, conduct Key Leader Engagements and build Joint Comprehensive Situational

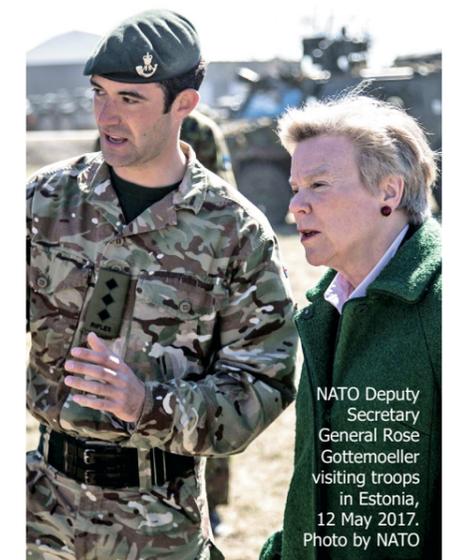
Awareness on behalf of the nominated NATO commander and his joint planning staff in the NATO headquarters. Much of the work of a standard NATO designated OLRT is very similar in nature to that of an NFIU so the potential synergy between both entities was obvious. As a result, the commanders of both JFCNP and NRDC-T took the decision to deploy their respective OLRTs to Tallinn to work alongside NFIU Estonia. This proved to be a major accomplishment for the NFIU since it not only provided us with a valuable collective training opportunity for our staff, but also for the wider Estonian Defence community with which we had now built strong ties.

Estonian Defence Force HQ staff and colleagues from the Ministry of Defence and other government departments involved in security in its widest sense, all got the opportunity to engage and work with major NATO operational headquarters and this activity would all help to cement our own role as a newly invited member of the Estonian Host National Support Steering Committee, the body responsible for much of Estonia's cross government crisis response management.

At the same time, the OLRT staff from these two southern-orientated NATO headquarters, JFCNP and NRDC-T, would get a much better appreciation of the challenges

they would face in a part of Europe with which they had little previous knowledge and by physically deploying to Estonia would better appreciate the "atmospherics" of living and working in this corner of northeast Europe. The presence of a team from a major NATO headquarters in Estonia and the nature of what they were doing would also send a powerful message that NATO was demonstrating its flexibility of response to any evolving crisis and providing further visible assurance of its commitments towards the Baltic States and Estonia, in particular.

Concurrently, and during Exercise STEADFAST JUNCTURE 2016, Headquarters Allied Rapid Reaction Corps (HQ ARRC) made a formal request to Estonian Ministry of Defence to host their annual RECCEX in Estonia, which would test and evaluate their own OLRT and involve the physical deployment of teams across the country and Exercise SABER STRIKE 2016, a LIVEX involving the deployment of U.S. and multinational forces elements through Poland and the Baltic States would also culminate in Estonia during the first week of June 2016. As a result, NFIU Estonia was faced with supporting or facilitating no less than three exercises, from the tactical to the strategic level during an extremely busy two-week period in early summer. These activities provided an extremely valuable tool with which to test and evaluate the NFIU concept and the staffs' ability to adapt and facilitate a



NATO Deputy Secretary General Rose Gottemoeller visiting troops in Estonia, 12 May 2017. Photo by NATO



wide range of activities across those domains which need to be taken into account during any NATO Crisis Response Planning.

We then cemented our initial capability development by repeating the process with NRDC-T in early 2017, which had the added benefit of testing our ability to support planning activities during the most challenging time of the year in northeast Europe. One should never underestimate the impact of climatic conditions on the terrain on which a force may need to deploy and the speed with which it could do so, during the darkest period of the year too.

**NATO's enhanced Forward Presence (eFP)**

As all of this activity was taking place in the training environment, and as the outcomes of the most recent NATO Summit in Warsaw permeated out, we entered the next chapter in our development as we took the NFIU concept forward and evaluated it under "live" conditions. As previously mentioned, the NATO-led eFP initiative evolved very rapidly after Warsaw, as befits the contemporary geopolitical situation, and early planning indicated that the lead elements of eFP in Estonia would arrive in early 2017. Time was of the essence as we prepared collectively, with our Estonian partners in the Estonian Defence Force HQ Staff and elsewhere to host the small liaison team that arrived in October 2016.

Inevitably, the NFIU took a leading role

in establishing a network of agencies and individuals with which to facilitate the arrival and reception of the eFP. At the same time, we maintained a responsibility towards our higher HQ to advise them on the potential impact of eFP on other ongoing initiatives here in Estonia in our role of maintaining JCSA. Without our valuable input and in-country expertise, HQ MNC NE would face significant challenges in reviewing and coordinating the eFP and other bilateral and multinational initiatives across their Area of Responsibility.

During 2018, our focus will turn to experimentation and proof of the concept as we wrestle with the idea of bringing a broader NATO perspective to a national exercise and tackle the very real challenges associated with the deployment and hosting of a sizeable NATO force into a relatively small engagement space, whilst potentially facing several traditional and non-traditional threats.

In the case of the former, the NFIU, in partnership with both the Estonian Defence Force HQ and Estonian Defence League, will look forward to hosting HQ MNC NE during Exercise SIIIL 18. SIIIL18 is the latest in a series of national Force Generation and Mobilisation exercises, which traditionally culminate in a Field Training Exercise (FTX). Naturally, in 2018, this will feature the NATO eFP in Estonia and several other multinational participants, so the exercise provides HQ MNC NE with an excellent opportunity to develop its capability to exercise C2 in the Baltics, given that the location of the exercise will allow interaction with both

Estonia and Latvia. It is hoped that HQ MNC NE will deploy its Initial Coordination Element to Tallinn during the exercise in order to allow the NFIU to refine its capability to host contingency and crisis response planning and facilitate liaison with the Host Nation.

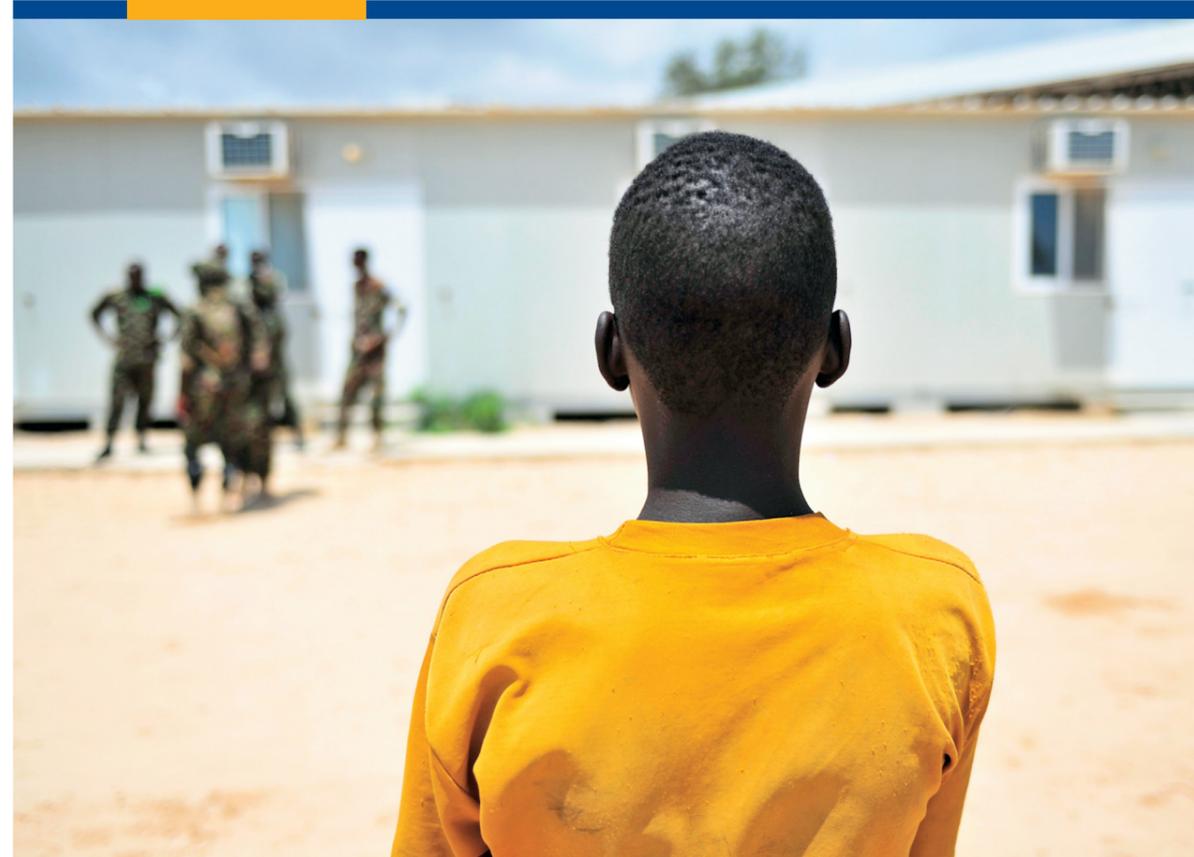
For later in the year, we would like to explore the possibility of hosting an event, which would allow all of those actors in Estonia responsible for delivering Host Nation Support and Resilience to a large scale military force deployed to the region, to come together and work through some challenging problem sets in order to better understand the very real issues that NATO and the Host Receiving Nation would face in delivery of enhanced security, whilst facing significant traditional and non-traditional threats. We will also continue with our commitments towards broader NATO contingency planning for the region and with preparing the Second Editions of our Comprehensive Preparation of the Environment (CPOE) and Operational Logistics and Planning Manual (OLAM), which are rapidly becoming accepted benchmarks for NATO planners.

It has been a relatively short but exciting journey in developing a new NATO capability on the fringes of the Alliance here in northeast Europe, but it is important that we all keep the *raison d'être* of the NFIU concept at the forefront of our minds: To enhance Alliance responsiveness in times of crisis and to provide the Baltic Region with an assurance that the defence of their nation is a collective responsibility within NATO. †



**EXERCISE SIIIL 2018 ("Hedgehog 2018"):** Estonia's largest exercise will be held in Southern Estonia in May. Over 13,000 members of the Estonian Defence Forces, Estonian Defence League volunteers, reservists as well as NATO and Partner soldiers from 13 countries will participate in the exercise. Photo by NATO

OPINION



**LEFT:** Former child soldiers enlisted by Al Shabaab are handed over to the UN Children's Fund (UNICEF) after their capture by forces of the African Union Mission in Somalia (AMISOM). Photo by UN **RIGHT:** Military bullet casings in a child's hand. Photo by Shutterstock.

**CHILDREN AS COMBATANTS:  
A Dispassionate Look**

by **LIEUTENANT COLONEL JOHN MOORE**  
United States Army  
JWC Legal Advisor

**Introduction**

Much emotion surrounds this topic not only in conversations, but on popular media.<sup>1</sup> Even in the most intellectually heightened settings, such as, at institutions of higher legal learning,<sup>2</sup> it can be difficult to put feelings to the side and seek objective solutions to child soldiering. We know that international law prohibits:

1. Use of children under 15 years of age in any military capacity;
2. Compulsory military service of any person under 18 years old; and,
3. Deployment of any child under 18 years into an area of active hostilities.<sup>3</sup>

These prohibitions only apply to nations that are signatories to the corresponding treaties and statutes, and do not prohibit use of children from 15 to 17 years old in some military capacities. Most people would agree that these prohibitions are proper. However, others contend that the law does not go far enough and should prohibit military service

of any kind to anyone under 18.<sup>4</sup> On the other side of the debate, some find these laws too restrictive. This article will examine the applicable international law and the strategies used to address child soldiering, then will identify the measures the UN has taken to address the problem of child soldiering and suggest other possible courses of action.

**Assessment of the current situation: figures, perspectives**

The International Committee of the Red Cross (ICRC), and other agencies, estimate that as many as 300,000 children under 18



## (...) international law has its limitations in bringing those who use child soldiers to justice in the courtroom, yet is effective in its deterrence effect and in bringing the issue to the forefront.

are actively participating in armed conflicts worldwide.<sup>5</sup> The UN reported that, as of 2016, 54 armed groups were using children in their fighting forces.<sup>6</sup> Although the figure of 300,000 is questionable, as this article will show, there is good authority that use of young of children as direct combatants can cause post-traumatic stress disorder (PTSD) and other serious psychological and adjustment problems throughout the child's life.<sup>7</sup> There are also substantiated reports that child soldiers become ready victims of sexual assault, pedophilia, slave trafficking, kidnapping, torture, starvation and forced drug use.<sup>8</sup>

The UN Secretary General's Annual Reports to the Security Council on Children and Armed Conflict (Annual Reports) details these calamities. By-products of the mandates of UN Security Council Resolution (UNSCR) 1612,<sup>9</sup> they also feature Annexes that list the world's known offenders of child soldier international law.<sup>10</sup> The bulk of the child soldier violations occur in Sub-Saharan Africa, followed by the Middle East and Asia. In recent months, abuses have increased substantially in the Middle East, due to the escalation of hostilities in Yemen, where recruitment of children increased "fivefold". Children are even employed as suicide bombers.<sup>11</sup> Also, as shown below in this article, boys overwhelmingly represent child soldiers according to credible UN field research<sup>12</sup> despite popular storylines that contend that girls comprise up to 40 percent of child soldiers.<sup>13</sup> Finally, one should not evaluate the situation without considering age of persons considered "children". This

article will also show that there are major differences legally and morally between military use of persons 15 to 17 years old, and those under 15.

The Annexes to the Annual Reports generally reveal that, in 2015, the nations with the highest numbers of state and non-state actors who practice child recruitment are located in the Democratic Republic of Congo (DRC) (12), Myanmar (8), Syrian Arab Republic (6), and Yemen (5).<sup>14</sup> The known worldwide total of armed groups that practice child recruitment is 54, of which only three are state actors. There have been but spotty improvements in reducing recruitment of children as soldiers in the last two decades; overall it is a runaway crisis situation. How effectively has international law addressed this crisis? We will examine this next. This will reveal that international law has its limitations in bringing those who use child soldiers to justice in the courtroom, yet is effective in its deterrence effect and in bringing the issue to the forefront.

### The law

The seminal laws governing children in combat are Additional Protocol I to the 1949 Geneva Conventions (Additional Protocol I);<sup>15</sup> The Convention of the Rights of the Child;<sup>16</sup> Optional Protocol To The Convention On The Rights Of The Child On The Involvement Of Children In Armed Conflict (Optional Protocol CRC);<sup>17</sup> and the Rome Statute of the International Criminal Court (ICC).<sup>18</sup> Criminal prosecution for violations will not apply to nationals of states who are not signatories to the ICC Treaty, as shown in the discussion below.

Additional Protocol I, Article 77 (3) was the first significant step toward applying international law to child participation in armed conflicts. It requires parties to an armed conflict to "take all feasible measures" to ensure that children under 15 years old do not "take a direct part in hostilities". It also prohibits recruitment of these children into the parties' armed forces.<sup>19</sup>

The term "feasible" provides ways for a party to rationalize that its use of child soldiers was lawful. Such an escape mechanism weakens the effect Article 77. However, this provision of Additional Protocol I serves to

bring the child soldiering issue formally to the attention of UN member states.

The Convention of the Rights of the Child, Article 38 (2) and (3) repeats nearly verbatim the restrictions of AP I. It prepared the way for future treaties, such as Optional Protocol CRC, that increased the age restrictions by defining a child in Article 1 as a person "below the age of eighteen years," except where legal majority is at an earlier age.<sup>20</sup> This latter clause is another avenue to evade the law, as it gives nations the opportunity to take advantage of local laws that confer majority on a person at an age under 18.<sup>21</sup>

Optional Protocol CRC is the treaty that brings the child-soldier protection provisions of Additional Protocol I and Convention of the Rights of the Child together by raising to 18 the minimum age for compulsory conscription and direct participation in hostilities.<sup>22</sup> To date, 165 nations have ratified Optional Protocol CRC; 47 of these nations have made reservations to limit the scope of the treaty's application. This points to "wiggle room," or another way around the rules, as most of the reservations ease the strictness of the provisions; for example, by agreeing to use "feasible" measures to comply with underage recruitment.<sup>23</sup>

**T**HE ICC STATUTE gives these treaties the force of law in Article 8, 2 b (xxvi) by declaring it a war crime to "(conscript or enlist) children under the age of 15 years into the national armed forces or (use) them to participate actively in hostilities."<sup>24</sup> However, other legal prohibitions provided for in Convention of the Rights of the Child or Optional Protocol CRC are not within the prosecutorial authority of the ICC, such as drafting of children between the ages of 15 to 17. Also, since the ICC only tries cases that states cannot or will not prosecute, its reach is limited. The only case involving illegal child recruitment that the ICC has completed to sentencing, with great difficulty and cost, was its first case: The trial of Thomas Lubanga Dyilo, a warlord who operated in DRC.<sup>25</sup>

As a new tribunal still establishing precedent, to date the ICC has only tried twelve cases to completion.<sup>26</sup> Also, as with the Optional Protocol CRC, not all nations have embraced the ICC. Thirty-one signatories have not ratified the ICC, to include the U.S. and the

Syrian Arab Republic; and 41 member nations, to include India, China and Iraq, have neither signed nor accepted jurisdiction.<sup>27</sup> This is especially problematic in the case of the Syrian Arab Republic and Iraq, where notorious terrorists groups such as Islamic State in Iraq and the Levant (ISIL) continue to openly recruit and train children, over half under the age of 15, for lethal military and terrorist missions.<sup>28</sup> It is also likely that many violations occur in India and China, both nations with large populations and governmental structures that make monitoring difficult.

In sum, the prohibition of child soldiering in international law—with its loopholes; inapplicability to certain state actors and terrorists; member nation exceptions; and ICC's nascent track record—serves as a modest deterrent to use of child soldiers. Despite these laws and the pledges of nations that have ratified them, illicit use of child soldiers persists, as the UN itself attests. With apparent knowledge of the laws' weaknesses, the UN has established research and "compliance mechanisms" through the United Nations Security Council Resolution 1612 (UNSCR 1612)<sup>29</sup>, and has sponsored and encouraged many outreach initiatives designed to raise public consciousness of illicit child soldiering. This endeavor has been an effective, detached fact gathering mechanism.

### Anti-child soldiering fact-gathering and advocacy outreach initiatives

Outside of UNSCR 1612, the UN has used its own agencies, and encouraged non-governmental organizations (NGOs), to tackle the issue of child soldier recruitment. Within the UN, the principal task masters on child soldiering are the Security Council, United Nations Educational, Scientific and Cultural Organization (UNESCO), and United Nations International Children's Emergency Fund (UNICEF). Major NGOs working with UN encouragement include ICRC, Amnesty International, World Vision, and Human Rights Watch.<sup>30</sup>

The Security Council has taken the lead in the fact-gathering tasks through its issuance of UNSCR 1612. UNSCR 1612 establishes the compliance and advocacy measures to dissuade nations from using children



ABOVE: A view of the press conference held by the Coalition for the International Criminal Court (CICC), an alliance of over two hundred non-governmental organizations (NGOs), on the Court's first-ever verdict, rendered on 14 March 2012 in the case against Thomas Lubanga Dyilo. A militia leader of the Democratic Republic of the Congo, Lubanga was convicted of enlisting child soldiers in his operations between 2002 and 2003. Photo by UN

as warriors. UNSCR 1612 has engendered the Annual Report, as discussed above, an excellent chronicle that provides statistics, credible accounts of militia groups using child soldiers, and many other related statistics detailing child war casualties. Well-worth reading, it summarizes findings of field agents who get as close as possible to hostile actors in order to ascertain facts. The Report relies on bare facts, data and logical analysis, unlike some unreliable non-UN reports.

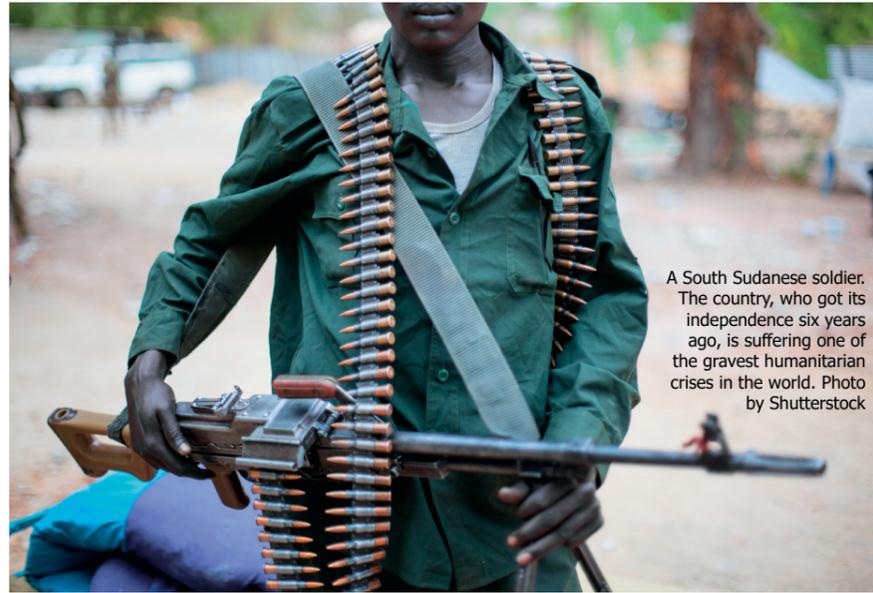
Notably, the Reports undercut the widely held figure of 200,000-300,000 child soldiers worldwide. They provide documented figures of new known child recruits each year, but due to the ever-changing situation, they cannot keep a running total. A fair reading of the Reports from 2000 to 2015 cannot produce a figure to within 10,000; but the total is certainly less than 200,000. At best, the standard figure is speculative.

It is eye-grabbing when we read that there are 200,000-300,000 child soldiers worldwide, and some UN agencies go along with this estimate.<sup>31</sup> While this number ignites passions and commands initial attention to the issue, even the UN agencies asserting it

acknowledge that the figure is uncertain.<sup>32</sup> Even if we were able to verify a figure, we would also need to break the numbers down to make them useful, with categories such as: Specific age ranges of children involved, whether the counted soldiering is in direct or indirect combat support, or the duration of soldier status of the child. While headcount is not all-important, it is essential when assessing a crisis accurately and in allocating resources to address it. A serious study of the statistics would reveal many underlying circumstances of child recruitment, and would more reliably show the actual ratio of boys to girls who are child soldiers.

Another questionable statistic is the popular assertion that girls comprise 40 percent of child soldiers.<sup>33</sup> There simply is not enough reliable data to arrive at such a figure. In fact, the UN Annual Reports and other studies show that girls comprise at most ten percent of new child recruits total, and may be as low as two percent.<sup>34</sup> It is clear that boys are the primary victims of child soldier recruitment, and are in the most need of rehabilitative resources due to the effects of child soldiering and abductions worldwide.





A South Sudanese soldier. The country, who got its independence six years ago, is suffering one of the gravest humanitarian crises in the world. Photo by Shutterstock

**Under 18, or under 15? (What constitutes a child soldier? Does culture matter in the debate? Are child soldiers always innocent victims?)**

The internet advocacy sites are loaded with disturbing photos of weapon-bearing children and other poignant images, such as cartoons of crayon boxes full of bullets. Such sites apparently receive the majority of access “hits,” since initial Google© searches will pull

up these sites first. Most of the general public worldwide support prohibiting deployment of children under 15 in combat and drafting of any person under 18; but there is not an overall consensus to ban all children under 18 from taking part in hostilities. Cultural differences result in a different approach to child soldiers. Sub-Saharan Africa, where about half of the world’s child soldiering takes place, can serve as an example of how culture can explain, but not excuse, use of child soldiers.

In this region, roughly 40 per cent of

its 930 million people are below the age of 15 years, contrasted with a figure of under 20 per cent in European countries and the U.S.<sup>35</sup> Often, child soldier recruitment is more a quest to access plentiful labor than an evil design on children. Also, contrary to norms in Western countries, these cultures do not attach stigmas to child labor. African children, especially those of the predominant lower class, perform arduous household and farming chores at a young age and even work as house servants for the wealthy in order to help support their families. Naturally, these factors do not justify the abuses in child recruiting, but they ought to factor into decision-making.

The popular, stylish advocacy outlets often assume that child soldiers are always victims and never assailants. Under international law, a child pointing a loaded weapon, or otherwise showing hostile intent, can be legally engaged with lethal force.<sup>36</sup> We certainly want to keep young children out of this situation, but before applying prohibitions to older children, we should consider that banning military service for persons between the ages of 15 and 17 is unreasonable in some circumstances. Adolescents mature and grow at different rates, especially in the 15-17-year age range. Some 16-year olds are indeed more mature than many people over 18. Nations not on the UN child soldiering offender list continue to allow military academies to matriculate children as young as 12 years old.



In the U.S., with strong public approval, local police operate military style “boot camps” to teach juvenile offenders discipline and moral character. Therefore, the UN should cautiously consider gray areas of child soldiering in the upper teen years as it adjusts its laws and policies concerning child soldiers.

**Solutions: Legal and practical**

The UN continues to address illegal use of children as soldiers and seeks to prioritize efforts that address conditions that give rise to the crisis. On the legal side, the UN already assists Rule of Law programmes, such as those of the U.S. sponsored Defense Institute of International Legal Studies (DIILS). DIILS has sent teams of legal educators into disadvantaged countries, with success, to teach native legal personnel techniques on investigating and prosecuting war crimes in country.<sup>37</sup> Empowering local professionals keeps a foreign national footprint away from criminal justice, and is designed to obtain support from local populations. The UN provides logistical and in-country support to DIILS. The UN has a robust Rule of Law programme,<sup>38</sup> but concentrates mainly on developing national laws and constitutions. The UN currently relies heavily on Demobilization, Demilitarization and Reintegration (DDR) of former child soldiers,<sup>39</sup> to remedy damages. This tends to be an expensive programme, which is difficult to execute.<sup>40</sup> The DIILS model is cheaper and

gets better results, and the UN should direct its resources in emulating that model.

In addition, the UN should attack the problem with an effects-based military approach. The UN has at its disposal some 67,000 peacekeeping troops from the UN and the African Union (AU) in Africa,<sup>41</sup> and in other areas where child soldiering takes place. This presents an opportunity for multinational missions to develop Information Operations that teach rebel groups that use of child soldiers is not only morally questionable, but ineffective. The messaging would stress that children tend to be less-disciplined combatants who are easily influenced by outside forces. Also, putting children in harm’s way is not a good way to get people sympathetic to the rebel cause.

Addressing these problems in the hardened rogue elements is particularly challenging due to the raw danger and lack of accessibility, but with skilled special forces troops some progress could be made. Unfortunately, some use of lethal force is likely in these operations, which would result in casualties. However, the problem has become so ingrained in some areas that strictly non-lethal methods will not accomplish the mission. Commanders would have to make careful judgments based on doctrinal targeting analyses. Also, the UN could play a significant role in providing balance to some of the emotionally-charged rhetoric found mostly on the internet, and sometimes in print media. The aforementioned studies that UNSCR

1612 generates is a definite “sustain” practice. Distribution of extracts and adaptations of this report around NATO would spread accurate information and appropriate situation awareness. Finally, NATO trainers are doing their part by including more scenarios involving rogue paramilitary groups who use child soldiers in its training exercises. Given that exercises cannot be issue-centric, addressing child soldier abusers will inevitably touch upon so many other wartime effects on children to include displacement, fratricide, and sexual abuse as a weapon of war. Such injects that involve child soldiering will spread correct information about the law and will enrich training for all Training Audience participants. †

**END NOTES:**

- 1 Some of the most influential, and often militant, anti-child soldiering websites include: <https://www.dosomething.org/facts/11-facts-about-child-soldiers> (Site uses vernacular and mild profanities); <http://www.peacedirect.org/child-soldiers?gclid=CJj-77bmpM4CFTYw0wod0XMNEw>; <https://www.warchild.nl/doneer?gclid=CLr56bTnpM4CFYcV0wo dTaABvg>; [https://twitter.com/ChildSoldiersIn?ref\\_sr c=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr %5Eauthor](https://twitter.com/ChildSoldiersIn?ref_sr c=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr %5Eauthor); <http://www.child-soldiers.org/> Splash page features interpretative dancers and the title in bold: “It is immoral for children to be used in adult wars”; <https://www.globalcitizen.org/en/content/7-countries-that-still-use-child-soldiers/>
- 2 One classroom at a renowned military law institute is bedecked with child-authored paintings of sad-faced children in military uniforms.
- 3 See FN 15-18, and accompanying text, infra, for full description of the laws.
- 4 UNICEF, Guide to the Optional Protocol on the Involvement of Children in Armed Conflict [http://www.unicef.org/publications/files/option\\_protocol\\_conflict.pdf](http://www.unicef.org/publications/files/option_protocol_conflict.pdf); <http://www.amnestyusa.org/our-work/issues/children-s-rights/child-soldiers>; <https://www.hrw.org/news/2008/12/03/facts-about-child-soldiers> (strong push for ratification of under 18 prohibition treaty)
- 5 Int’l Comm. of the Red Cross, Child Soldier (2003) [hereinafter Child Soldier], See also infra, notes 31 and 32.
- 6 Secretary-General Annual Reports to the Security

**Definition of a child soldier**

\* A child associated with an armed force or armed group refers to any person below 18 years of age who is, or who has been, recruited or used by an armed force or armed group in any capacity, including but not limited to children, boys and girls, used as fighters, cooks, porters, spies or for sexual purposes. (Source: Paris Principles on the Involvement of Children in Armed Conflict, Published in 2007)

<https://childrenandarmedconflict.un.org>

**RECOMMENDED READING**

Working Paper No. 1 (updated 2013): The Six Grave Violations Against Children During Armed Conflict, The Legal Foundation [https://childrenandarmedconflict.un.org/publications/WorkingPaper-1\\_SixGraveViolationsLegalFoundation.pdf](https://childrenandarmedconflict.un.org/publications/WorkingPaper-1_SixGraveViolationsLegalFoundation.pdf)

Photo by UN



ISHMAEL BEAH

**TO KNOW MORE ON CHILDREN AFFECTED BY WAR:**

**A LONG WAY GONE**

Ishmael Beah (left), former child soldier, best-selling author, and UNICEF Advocate for Children Affected by War. In 1991, the outbreak of a brutal civil war in Sierra Leone upended the lives of millions. Ishmael Beah’s parents and two brothers were killed and he was forcibly recruited into the war at age 13. After two years, with UNICEF help, he was removed from the army and placed in a rehabilitation home in Freetown. Ishmael Beah’s book, “A Long Way Gone: Memoirs of a Boy Soldier” was published in the United States in 2007. It has since been published in Canada, Europe, Latin America and Asia and appears in over 35 languages.

[https://www.unicef.org/people/people\\_47890.html](https://www.unicef.org/people/people_47890.html)



Council On Children and Armed Conflict, [hereinafter Annual Reports], available at: <http://watchlist.org/secretary-general-annual-reports-to-the-security-council-on-children-and-armed-conflict/>. See also, Child Soldier; The UN Children's Fund (UNICEF) & Coal. to stop the use of Child Soldiers, Guide to the Optional Protocol on the Involvement of Children in Armed Conflict (2003); <http://www.amnestyusa.org/our-work/issues/children-s-rights/child-soldiers> <https://www.hrw.org/news/2008/12/03/facts-about-child-soldiers>

7 Elisabeth Schauer and Thomas Elbert, The Psychological Impact of Child Soldiering, in *Trauma Rehabilitation After War and Conflict* 311, 311-360 (Erin Martz ed., Springer Science+Business Media, 2010), <http://www.usip.org/sites/default/files/missing-peace/The%20psychological%20impact%20of%20child%20soldiering%20-%20Schauer.pdf>.

8 UN Int'l Children's Emergency Fund, Children in War (1996) (many credible footnoted sources), <http://www.unicef.org/sowc96/intro.htm>.

9 S.C. Res. 1612, U.N. Doc. S/RES/1612 (26 Jul. 2005) [hereinafter UNSCR 1612]

10 <http://watchlist.org/secretary-general-annual-reports-to-the-security-council-on-children-and-armed-conflict/>

11 Peter W. Singer, *Tragic Challenge of Child Soldiers* (Brookings Inst. 2005), <https://www.brookings.edu/opinions/tragic-challenge-of-child-soldiers/>

12 See FN 32, *infra*.

13 War Child, *Ibid* (40 per cent); <http://yaleglobal.yale.edu/content/child-soldiers> (40 per cent); [http://www.cfr.org/human-rights/child-soldiers-around-world/p9331\(30 per cent\);](http://www.cfr.org/human-rights/child-soldiers-around-world/p9331(30%20per%20cent);) <https://www.dosomething.org/facts/11-facts-about-child-soldiers> (10-30 per cent; reported as a "fact".)

14 FN 6

15 Protocol Additional to the Geneva Conventions of 12 Aug. 1949, and Relating to the Protection of Victims of International Armed Conflicts, art 77, June 8, 1977, 1125 U.N.T.S. 3 (entered into force Dec. 7, 1978). [hereinafter Additional Protocol I].

16 Convention on the Rights of the Child, Nov. 20, 1989, 1577 U.N.T.S. 3; 28 I.L.M. 1456 (entered into force Sep. 2, 1990). [hereinafter Convention of the Rights of the Child].

17 Optional Protocol to the Convention on the Rights of the Child On The Involvement of Children in Armed Conflict, 2173 U.N.T.S. 222 (entered into force Feb. 12, 2002). [hereinafter Optional Protocol CRC].

18 Rome Statute of the International Criminal Court, U.N. Doc. A/CONF. 183/9 (1998) (United Nations Diplomatic Conference of Plenipotentiaries on the Establishment of an International Criminal Court, July

17, 1998), [hereinafter ICC]

19 Additional Protocol I, *supra* note 15, art 77, 2.

20 UN General Assembly, Convention on the Rights of the Child, 20 November 1989, United Nations, Treaty Series, vol. 1577, p. 3, available at: <http://www.refworld.org/docid/3a66b38f0.html> [accessed 1 August 2016]

21 For a comprehensive list of ages of majority worldwide, see: [https://en.wikipedia.org/wiki/Age\\_of\\_majority](https://en.wikipedia.org/wiki/Age_of_majority)

22 UN General Assembly, Optional Protocol to the Convention on the Rights of the Child on the Involvement of Children in Armed Conflict, 25 May 2000, available at: <http://www.refworld.org/docid/47fdb180.html> [accessed 1 August 2016]

23 William A. Schabas, Reservations to the Convention on the Rights of the Child, 18 HUM. RTS. Q. NO. 2 472, 472-491 (1996) (details nations reserving on Optional Protocol CRC and explains common practice of reservations of treaties), <https://muse.jhu.edu/article/13532>.

24 ICC, *supra* note 18, pt. 2, art. 8, 2 b (xxvi).

25 Michael E. Kurth, The Lubanga Case of the International Criminal Court: A Critical Analysis of the Trial Chamber's Findings on Issues of Active Use, Age, and Gravity, 2013 GOETTINGEN J. OF INT'L L. 5 431, 431-453 (2013) (painstaking analysis of the case), [http://www.gojil.eu/issues/52/52\\_article\\_kurth.pdf](http://www.gojil.eu/issues/52/52_article_kurth.pdf).

26 <http://www.amicc.org/icc/cases>. This figure represents trials on the merits resulting in conviction or acquittal.

27 [https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtldsg\\_no=XVIII-10&chapter=18&clang=en](https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtldsg_no=XVIII-10&chapter=18&clang=en)

28 Annual Report to UN, 2016.

29 S.C. Res. 1612, U.N. Doc. S/RES/1612 (26 Jul. 2005) [hereinafter UNSCR 1612 ] (noting in the preamble that the Security Council "remain(s) deeply concerned over the lack of overall progress" in protecting children from armed conflict.)

30 <http://www.amnestyusa.org/our-work/issues/children-s-rights/child-soldiers>; <http://www.worldvision.org/about-us/media-center/child-soldiers>; <https://www.hrw.org/topic/childrens-rights/child-soldiers>; <http://www.amnestyusa.org/our-work/issues/children-s-rights/child-soldiers>

31 [http://www.unicef.org/publications/files/option\\_protocol\\_conflict.pdf](http://www.unicef.org/publications/files/option_protocol_conflict.pdf) ("research suggests 300,000... (but)no one knows the real number"); <https://www.hrw.org/news/2008/12/03/facts-about-child-soldiers> ("hundreds of thousands...although there are no exact figures."); <http://www.amnestyusa.org/our-work/issues/children-s-rights/child-soldiers> (defers to UN "estimate" of "300,000"; <http://www.nytimes.com/2002/04/22/opinion/stopping-the-use-of-child-soldiers.html> ("best estimate" is 300,000)

32 The UN Children's Fund (UNICEF) & Coal. to stop the

use of Child Soldiers, Guide to the Optional Protocol on the Involvement of Children in Armed Conflict (2003), 5, [http://www.unicef.org/publications/files/option\\_protocol\\_conflict](http://www.unicef.org/publications/files/option_protocol_conflict) ("research suggests 300,000...(but)no one knows the real number"); Human Rights Watch, Facts About Child Soldiers (2008), <https://www.hrw.org/news/2008/12/03/facts-about-child-soldiers>. ("Although there are no exact figures, hundreds of thousands of children under the age of 18 serve in government forces or armed rebel groups."); Amnesty Int'l, From Cradle to War, <http://www.amnestyusa.org/our-work/issues/children-s-rights/child-soldiers>. (defers to UN "estimate" of "300,000"; Unattributed, Stopping the Use of Child Soldiers, N.Y. TIMES, Apr. 22, 2002 at , <http://www.nytimes.com/2002/04/22/opinion/stopping-the-use-of-child-soldiers.html>. ("best estimate" is 300,000)

33 See FN 13 and accompanying text, *supra*.

34 See Annual Reports, *supra*.

35 UN Department of Economic and Social Affairs, UN Population Division, "World Population Prospects: The 2006 Revision" database available at: <http://esa.un.org/unpp/> (last visited 1 August 2016)

36 U.N. Charter art. 51; customary law allowing individual and collective self-defense

37 U.S. Army Afr. Pub. Affairs Office, USARAF JAG Supports Rule-of-law Education in East Africa, Mar. 25, 2011 at <https://www.army.mil/article/53831/usaraf-jag-supports-rule-of-law-education-in-east-africa>.

38 See <https://www.un.org/ruleoflaw/thematic-areas/access-to-justice-and-rule-of-law-institutions/>

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41 The White House Office of the Press Sec'y, Fact Sheet: U.S. Support for Peacekeeping in Africa (2014), <https://www.whitehouse.gov/the-press-office/2014/08/06/fact-sheet-us-support-peacekeeping-africa>.



## JWC CLUBS – PART I

### All for One Team

The JWC boasts eleven highly effective and diverse clubs, including those introduced in the following pages. They may seem incongruous, but all are a key part of the JWC's "One Team" ethos and dedicated to fostering a true sense of unity throughout the entire community. Many of them include in their agendas skill-building workshops as well as social events. Clubs are an important part of the JWC experience for their members and tick all the boxes: Educational and social events, sports and leisure activities, cultural interaction among people from all different backgrounds, parties, adventure, and in the next one, follow up with the rest.

Photos by JWC PAO and the Clubs



**CHESS CLUB**

**"I NEVER LOSE. I EITHER WIN OR I LEARN."**

*By Lieutenant Commander Steven Charles*

IN MARCH 2017, when I arrived in Stavanger, which is the home town and local club of current World Chess Champion Magnus Carlsen, I assumed there would be a club set up already. When finding out there was not, with the kind help of the local welfare and generous support from 426 Services, I canvassed for interest and started a club based on the keen responses I got. The first club nights started in June and took off after the JWC Newcomers BBQ in August. We now have ten regular youngsters visit the club (ages ranging from 7-12) and six regular adult players, together with 25 members on my e-mail list.

We meet once every two weeks in the 426 Services hall. Due to the number of young members wanting instruction, we

**"Chess is, after all, a game of equal opposing forces; a board game re-creating an Article 5 conflict, just without the cyber and hybrid threats."**

had to split the timings. The younger members come earlier for 20 minutes of hints and tips (I don't like to call them lessons) and then 40 minutes to play a couple of games and practice what they have learned. The adults meet up at any time in the afternoon. Games are limited to 30 minutes all moves each, so even an epic battle is over within the hour, meaning someone is always free to play, and people get to play up to three games against different players. You cannot recreate online the feeling of playing another person over the board with a timer.

Each club night we have a "Star of the Week" award when one of the youngsters gets to take home a trophy until the next lesson and gets a medal to keep. It is awarded, not for the best win, but to someone who has best applied that evening's hints and tips, or has just made a really good, well thought out, move. The chance of winning something is a great way to keep their attention. We have a wide range of abilities, from those who come for the fun of playing and those who are making quite notable advances in their play.

I have not followed any local tournaments yet, but I will be visiting the local club in Stavanger (current home club of the World Chess Champion). They are a small club but they do have tournaments. I would like to establish links and eventually take a JWC team down to play them. What I will start soon is a club ladder and pyramid where people can challenge a higher ranked player to try and take their spot, ultimately leading to a club adult and junior champion who can be challenged at any time.

**C**HESS IS NOT about winning or losing. And, this applies to the JWC training mission at the operational level for NATO; considering that the JWC focuses on strategic thinking and thinking outside the box. Chess is the ultimate game of skill in both lateral problem-solving and creative thinking. There is no chance, no luck; it is all done by the power of thinking.

The club motto is "I never lose. I either win or I learn." If you play chess thinking you will win every game, you would slowly drive yourself mad. You play to win, but if you

lose it is important that you learn from it and use it to make you a stronger player—like life— and lose less in the future. Even the world champion loses. He just loses less often than the rest and wins key games. There is a direct link between JWC exercises and chess; using what assets you have, coordinating them, getting the most out of them and getting all elements to work together... these are the key principles of chess. If you do not get all your pieces to work together in a coordinated effort—as One Team, if you like—you will often find yourself in trouble. Chess is, after all, a game of equal opposing forces, a board game re-creating an Article 5 conflict, just without the cyber and hybrid threats!

**F**OR THOSE WHO play a little, you cannot beat practice against others. Even playing against a computer is limiting as you play against the same style all the time and you do not get those moments of human error that you can spot, pounce on and use to go on and claim victory. The club offers lessons at all levels and has some useful books for people to borrow. For those who are interested, the brain is like any other muscle, it needs exercise. The problem-solving skills and lateral thinking skills you develop through chess are extraordinary. Training your brain to think along chess lines has direct benefits to other aspects of life (as well as what any hobby should), it takes your mind away from daily life. The benefits are so well known that chess is now taught as a matter of course in many UK schools, as well as being mandatory in other countries. Youngsters who are good at math tend to be very good at chess; those who play chess tend to get better at all subjects. It is a board game at the end of the day and like all board games it is fun, but where chess differs is that it trains your brain to think in a particular way, which benefits daily life.

Chess is both simple and complex. I can teach someone to play within 20 minutes. What starts then is a lifetime of endless learning possibilities. After just three moves each, there are over nine million possible board combinations. It is a game where we will always be able to improve, know more and get better.



Photos by Tudor Jelescu

**FOOTBALL CLUB**

**T**HE JWC FOOTBALL CLUB was in existence when I arrived in 2003. The club participates in a local Company 7 Aside League with the season running from April to October. This local league has some history. Since 1920, companies from the canning, rubber and furniture professions met on small football pitches in the Rogaland area. Up until the last two or three years, we played our matches on gravel (grus) pitches. The gravel surface left a lot to be desired as the pitches were uneven and frequently flooded with rain water. It was common to see JWC players with almost permanent grazes to their knees during the season.

Things have changed recently with the local council's (kommune) upgrading a lot of the local pitches to artificial turf. The improved surfaces have made the games much faster and more akin to 5 a-side style games (and a drastic reduction in grazes).

Many of the players of the Football Club change every year, especially after the summer break when many families are either leaving or joining the JWC. For the 2017 season, we had approximately 15 active playing members, and I hope in 2018 a similar number will come out to participate. I will be actively recruiting new players in January, well before the first game of the season in April.

We have representatives from many nations, with varying levels of "talent" in the team. From seasoned veterans (50+ years old, who should know better!) to young and fit military or civilian personnel, all are welcome. Brigadier General Steven J. De-

Palmer, JWC's Chief of Staff in 2010, was one my personnel favourites over the years and surprised many people with his fitness level, speed and soccer skills.

During the season, we normally train on Mondays and play a league match on the Wednesday. All the league matches are played in the evening with kick off times varying between 1800 to 2100 hrs. If you would just like to come for training (friendly kick around) and not actually play in the competitive league matches, that is fine. "The more, the merrier" for practice is the motto.

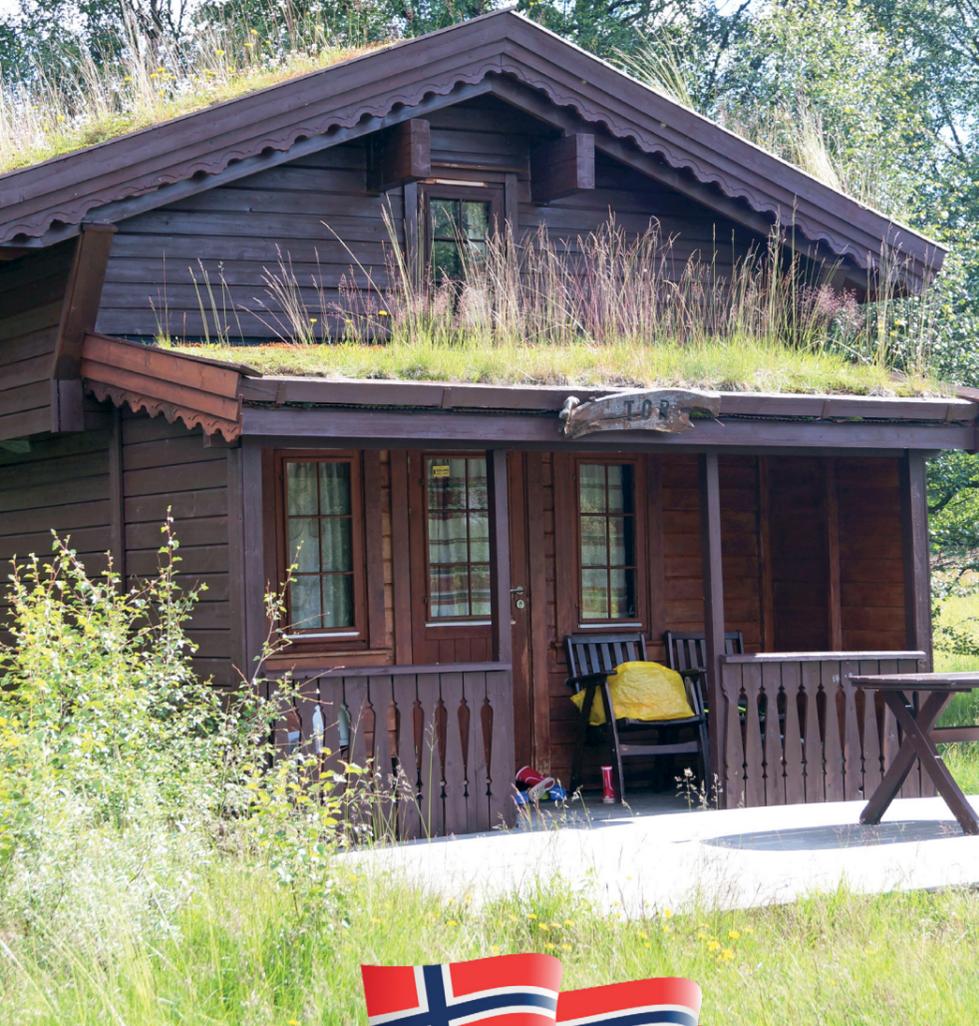
I am sure that some of you consider football a man's sport only, but that belief is slowly changing. There are plenty of hugely talented professional female players out there, hopefully becoming future role models and encouraging young girls to consider football as a career path. There is, however, still huge disparity between what a top female player can earn compared to a top male player, but that is sure to change as the women's game attracts bigger crowds and sponsors. Whilst the Club does participate in a male league, I would be delighted if any female JWC staff member or dependent (over 16) would like to come along for practice.

You don't have to be football crazy to play with us. Personally, I don't follow football that much on TV nor support one particular club or another, but just enjoy the opportunity to participate in a fun activity with like-minded work colleagues. Look out for my e-mails and consider coming along to practice as a first step. You have nothing to lose and plenty to gain.

*By Darren Gildert*



Brigadier General DePalmer, former Chief of Staff



## CABIN CLUB A GATEWAY TO THE SCENIC HIGHLANDS OF NORWAY

THE JWC MILITARY CABINS are excellent facilities for JWC staff and their families to enjoy the beauty of Norwegian landscape. The cabins, a two-hour drive from Jåttå, are within easy reach of all Sirdal alpine and cross-country ski areas. In summer, they afford ready access to a beautiful area for walking, hiking and exploring. Kjerag, the highest peak in the Lysefjord, is just a short car journey away. The cabins lead directly onto a lake and there is a rowboat available to exploit this amenity. The site currently comprises five cabins: three medium-sized ones with enough room to sleep six people and two small ones able to sleep four-six people. A sixth larger cabin includes three four-person and three six-person bedrooms plus com-

mon areas. The club, a self-sufficient entity operating its own funds, is able to recycle the funds gained through rental and membership to maintain the facility.

The Norwegian "hyttekultur", or cabin culture, is unique, one can say it carries a very special type of cultural significance for many people. A cabin is a calm and peaceful environment where Norwegians enjoy outdoor life, recreation and relaxation. The philosophy is to have a change from everyday life and get in touch with nature. According to one research, there are roughly 400,000 cabins in Norway, located largely in mountain areas.

**By Major Stephen Olsen and  
Adrian Williamson**

To know more about "hyttekultur", please visit: "My Cabin is My Castle" [www.forskningsradet.no/en/Newsarticle/My\\_cabin\\_is\\_my\\_castle/1253954827308?WT.ac=forside\\_nyhet](http://www.forskningsradet.no/en/Newsarticle/My_cabin_is_my_castle/1253954827308?WT.ac=forside_nyhet)



## SAILING CLUB

THE JWC SAILING Club encourages the sport of sailing by providing a safe, fun, friendly and collegial atmosphere for novice, amateur and professional sailors alike. Whether you are just beginning or have been sailing for years, you will find something to interest you in the club's activities.

We provide opportunities to learn and engage in dinghy sailing, powerboating, coastal sailing and other water sports via our numerous water craft; including kayaks, canoes, 32 dinghies and a 31-Foot Hallberg-Rassy 310, called Aurelius II.

Stretching from Tananger and Stavanger, south of Bergen all the way up to Trondheim, the Norwegian coast has a unique geographical make up of interconnecting waterways and stunning fjords, and the JWC Sailing Club provides an unparalleled opportunity to see a side of Norway not many people get to see during their stay here. A sailor's paradise!

**By Chris Hill**

[jwcssc.weebly.com](http://jwcssc.weebly.com)  
[www.facebook.com/JWCSailingClub/](https://www.facebook.com/JWCSailingClub/)

## TENNIS CLUB

THE JWC TENNIS CLUB has been going for many years and the members play regularly at the Topform Sports Centre at Randaberg, which comprises three all-year indoor courts and two outdoor courts. So, tennis is guaranteed regardless of weather or lighting conditions.

There are currently five core members and we are seeking more members, whether novice or regular players. We train once per week but also play *ad hoc* in-between those times and subject, of course, to the JWC Programme of Work. The highlights of 2017 have been the regular training sessions indoors and outdoors, and casual play on Sunday afternoons.

Our favourite male tennis player is Roger Federer, winner of eight Wimbledon, five U.S. Open, six Australian Open and one French Open Grand Slam titles. Our favourite female tennis player is Serena Williams, winner of no less than 23 World Grand Slam titles! These two world-class

masters have one thing in common: consistency in their style of play.

Tennis is a great sport for fitness, hand-eye coordination and tactics. At competition level, the positive stress of playing three or five sets over 2-3 hours is very rewarding. Doubles matches are even more fun as you have to consider each other's strengths and weaknesses and come up with a winning strategy, but at all costs you must win your service game, whilst trying to find the weak spots of your opponent(s).

We highly recommend more people joining the club as we can then start individual, doubles and mixed doubles competition ladders. If and when we do get enough players, we can then enter a local league or competition, in particular doubles. The club is also able to access coaching on a case-by-case basis. So, if you need to work on that top spin backhand, then come on down.

**By Lieutenant Colonel Giulio di Marzio  
and Wing Commander Mark Lunan**

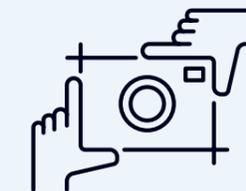


## ORIENTEERING CLUB

ORIENTEERING IS A SPORT that combines physical exercise and mental challenge. Basically, you navigate using a topographical map and compass on a set course from point to point in diverse terrain and as quickly as you can. Regular sports clothing, sports shoes with a good grip, a compass, resistance to "variable" weather conditions and you are good to go! Maps are provided at the event.

Established in 2014, the JWC Orienteering Club registers eleven members (2017). They participate in the seasonal (April to October) South Rogaland company league with events once a week in different locations and terrain types, e.g. Arboretet, Dalsnuten, Vatne skytebane,

JOINT  
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CLOSE-UP



Stavanger University, Høg-Jaeren wind farm. Each event has courses for different levels (skill/age/competitive/leisure). From November onwards, night time events are organized every two weeks. Headlamp and courage are the only extras needed!

Our club also purchases "leisure" orienteering maps whose control points remain in place for several months—ideal for first-timers, for family outings or for training.

All ages are welcome, no previous experience necessary. Orienteering is great fun and builds stamina and confidence. You visit areas that you have not seen before, get some fresh air and you may never get lost again!

**By Sarah Denieul**



## LADIES CLUB "FRIENDSHIP WITHOUT BORDERS"



**T**HE LADIES CLUB is the biggest club at the JWC, operating under the motto "Friendship Without Borders". The most important part of the club's programme is the socializing. One effect of foreign/overseas military assignments is when a family relocates, military personnel will go to work and quickly get to know new people. Most spouses, however, stay at home. That is where the JWC Ladies Club has a role to play as a venue where spouses may come together, meet people and have fun, spending quality time with friends.

Time changes, though, which means that more and more male spouses will come to Stavanger. Right now, the club has no male members, but this may soon change. That is one of the reasons why the club is in the process of becoming the "JWC Spouses Club", which is a proper name for a club set up to bring together and provide support to the spouses of military personnel—both male and female—posted to the JWC.

One of its unique aspects is that while the club is open to all nationalities, it is also a home to many different support groups that are set up nation-by-nation. This truly adds to the international experience of living abroad. Under the leadership of the different representatives, each nation hosts a "national theme" evening, which can highlight a traditional cultural event such as Thanksgiving, Scottish Dance, German Winter Celebrations, *Mardi Gras*, etc. The ladies in charge of a particular evening choose the evening's theme and prepare food typical of their nation in an effort to provide a flavour of their nation's culture.

Alternatively, the nations may select a fun aspect of their culture, such as an "Abba Night", "James Bond Night" or a night at the races. The ladies have an opportunity at these events to learn from each other's culture, be it an interesting tradition or the sharing of food or a custom. They socialize with ladies they might not otherwise meet

and also get some support network whilst living a long way from home. There are also three conversation groups, which allow participants to practice their English, German, or French speaking skills. These groups are open to all, and the members may join whatever their level of knowledge. In addition, activities are organized within the following groups: craft nights, handcraft mornings (knitting, stitching, crochet, sewing), outgoing events and line dancing.

There is nothing more challenging to a family than frequent relocation. That's why the ethos of the group is "Friendship Without Borders"; we help making it easier for everyone, and quality participation is encouraged. Anyone focused on a particular interest or keen on sharing a skill, can set up a group. The board is there to support such efforts and to help make known any new group that members may want to form.

*By Corinna Mientus and Cath Fraser*



## FISHING CLUB "IN COD WE TRUST"

**F**ISHING IN NORWAY is a way to embrace the local lifestyle. Countless lakes and rivers and an extensive coastline offer outstanding opportunities to catch a big one. Indeed, with a coastline longer than the equator and a sea full of fish to harvest (record-sized cod, salmon and halibut to mention, but a few) chances are you will get hooked on sea fishing while in Norway.

Anglers enjoy fishing locally for a wide variety of fish. The most common ones, mackerel and cod, may be caught almost all year round. Sometimes you will find redfish, pollack, tusk and ling as well. There are some good spots for fishing close to Hundvåg. If you are planning a bigger trip, Randaberg and the Sola beach are popular places where one may land bigger catches. In summertime we try to offer community fishing trips to Åmøy and Rennesøy where you will enjoy a relaxing day's fishing while extending your fishing experience or learning something new. As a member, you will have access not only to the club's fully equipped fishing boat, which is found at the Ulsnes base on the island of Hundvåg, but also to great year-round fishing. We are actually planning to buy a second boat so that each member has the possibility to rent a boat for free whenever they want. For safety reasons, life vests and a short introduction in using the boat are provided.

In addition, we try to offer club members and families fishing activities throughout the year, such as fishing for salmon and trout, as well as social activities like a BBQ at the Ulsnes pier. Once a year, we also try to organize a small workshop on how to filet fish or make "flame salmon"—salmon cooked over an open fire—or simply on how to fish from the pier. Sea fishing is free of charge in Norway while fishing in ponds and lakes and along streams and rivers requires a permit, which can be valid for a day, week or month. Salmon or trout may sometimes be caught from several spots around Stavanger.

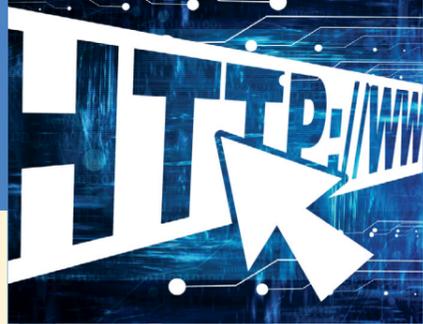


ger. The annual funding from Community Support and the membership fees are spent on new equipment, boat maintenance and club activities. If you are now interested in becoming a member of our club, we would be happy to see you joining. The club currently has 21 members.

*By Master Sergeant Martin Neugebauer*

Carsten Zeug (1.85 cm) with catch of the day, a Halibut that weights in excess of 40 kg!





## GENDER FOCUS



### PRESS CONFERENCE

#### Special Envoy for the United Nations High Commissioner for Refugees, Angelina Jolie, visits NATO Headquarters

United Nations High Commissioner for Refugees (UNHCR) Special Envoy Angelina Jolie visited NATO Headquarters in Brussels on Wednesday, 31 January 2018. Welcoming Ms. Jolie, Secretary General Jens Stoltenberg praised her “strong voice” and “great leadership for empowering women and the fight against sexual violence”.

Noting that NATO is based on democracy, individual liberty, the rule of law and the UN Charter, Mr. Stoltenberg pointed to the Alliance’s long record of fighting extremist groups which oppress women, like the Taliban and ISIS. “NATO has the responsibility to be a leading protector of women’s rights,” he said.

In a joint meeting of the North Atlantic Council and the Military Committee, Ms. Jolie and Allied representatives focused on NATO’s efforts to prevent sexual and gender-based violence and discussed what more the Alliance will do. Following the meeting, Secretary General Stoltenberg announced that “Special Envoy Angelina Jolie



and I have decided to work together, focusing on three points: training, monitoring and reporting, and awareness”.

Below are excerpts from the joint press conference at NATO Headquarters:

**Jens Stoltenberg:** “NATO is a military Alliance providing defence against military threats. But we are also a political Alliance based on our core values: democracy, individual liberty, the rule of law, and the UN Charter. Therefore, NATO has the responsibility to be a leading protector of women’s rights. We know from experience that strengthening the role of women in the armed forces is not only the right thing to do, but also the smart thing to do. NATO has a long record of fighting extremist groups, such as the Taliban and ISIS. These groups have the oppression of women at their very core. Therefore, I welcome the progress NATO and NATO Allies have made on the battlefield against extremism. We remain committed to this fight. Sexual violence is a tactic of war. Against women and girls, but also men and boys. NATO is already doing a lot to tackle this issue. But there is more we can do.”

**Angelina Jolie:** “Violence against women and children, particularly sexual violence, is an increasing feature of conflict and insecurity worldwide. Yet the use of rape as a weapon of war has been regarded inevitable feature of conflict

as a lesser crime and a problem too difficult or too uncomfortable for societies to address. This is a historic injustice and a critical issue of international peace and security. This is rape used as a weapon to achieve military or political goals. It affects men and boys as well as women and girls. It is used as a tool of political control, terrorism and ethnic cleansing. It is a major factor in the creation of refugee flows. Wherever it occurs, peace is far harder and far costlier to achieve. It therefore has a direct bearing on NATO’s efforts to protect stability and manage crisis that affect the security of Europe and global security.

So, we have talked today about NATO’s potential role in helping to create greater global accountability and deterrence for crimes against women in conflict zones. To increase the representation of women in militaries and to strengthen training and doctrine to make NATO the global leader, military leader in this area. (...) There can be no lasting peace and security without equal rights and participation for women in all societies, and those rights cannot be achieved in an environment where there is impunity for mass crimes against women and girls.”

**Full text:** [https://www.nato.int/cps/en/natohq/opinions\\_151264.htm](https://www.nato.int/cps/en/natohq/opinions_151264.htm)

### NEED TO KNOW

#### GENDER IN JWC-DIRECTED EXERCISES: AN UPDATE

By Sarah Denieul, Joint Warfare Centre

TRIDENT JUNCTURE 2015 saw JWC’s first implementation of Bi-SC Directive 40-1 (on integrating UNSCR 1325 and gender perspective into all NATO Command and Force Structure Headquarters’ activities) into an exercise. The southern “SOROTAN” fictitious scenario/setting provided an exciting opportunity to exercise Training Audiences on all four pillars of UNSCR 1325 (Participation, Prevention, Protection, and Relief and Recovery) across the PMESII domains. Subsequently, the scripted gender perspective content was adapted to the more northern or European focused non-Article 5 crisis response exercises conducted by the JWC.

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In the Collective Defence context of TRIDENT JAVELIN 2017 (TRJN17) and with the reviewed Bi-SC Directive 04-001 in mind (2017), we once again adjusted the angle and made the decision to turn the camera inwards. In the simulated Joint Operations Area, comprising several modern NATO Member Nations, the Joint Task Force Headquarters was urged to consider the unintended impact that Allied Force deployment may have on a host nation’s civilian population.

In JWC exercises, we are basically looking at the following:

- Are the population groups considered to be at risk the same as the groups at risk prior to deployment, or has there been a shift?
- To what degree could a massive military presence facilitate or even create opportunities for criminal activities, such as organized crime?
- Was this possible adverse impact foreseen, assessed and prepared for during the planning and analysis stages? What steps are taken in-theatre to address this effect?
- In an Article 5 context and as one of the parties to the conflict, to what extent is the NATO command responsible and accountable for the protection of the civilian population?
- Are cooperation and coordination mechanisms in place with the host nation government, with civil society organizations and other international and non-governmental organizations in order to mitigate and respond to risks to the population?

Drawing direction, guidance and inspiration from Bi-SC Directive 40-1, SACEUR’s Annual Guidance on Education, Training, Exercises and Evaluation (SAGE) 2018, the 2016-2018 NATO EAPC (Euro-Atlantic Partnership Council) Action Plan on Women, Peace and Security, and NATO Secretary General’s most recently published Annual Report (2016), we look forward to ensuring the inclusion of challenging gender-related content in the upcoming TRIDENT JAGUAR 18 and TRIDENT JUNCTURE 18 exercises.

Sarah Denieul



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