



THE MAGAZINE OF THE JOINT WARFARE CENTRE |

# THE THREE SWORDS

OPERATION JAGUAR – NORWAY

**JWC'S  
ONE TEAM  
CULTURE**

## STEPS TO CONNECTED FORCES

- STEADFAST JAZZ 13
- TRIDENT JAGUAR 14
- TRIDENT JUNCTURE 15

## FROM CAMPAIGN TO CONTINGENCY OPERATIONS

REFLECTIONS ON TRAINING AND FUTURE CAPABILITIES

# OPERATIONALIZING CONNECTED FORCES

**+** CYBER  
DEFENCE  
REVIEW

NATO  
+  
OTAN

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Next issue: October 2014



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## ■ ■ editor's note



## THE THREE SWORDS

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**THE THREE SWORDS** is the Joint Warfare Centre's authorised magazine published three 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. Opinions expressed in this magazine are those of the authors and do not necessarily represent the policies and points of view of NATO. The Editor reserves the right to edit or shorten submissions.

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### DEAR READER,

Once again, it is my pleasure to introduce to you the latest edition of The Three Swords magazine. As usual, thanks to our many contributors, it is full of relevant and useful information. In particular, this edition focuses on the Connected Forces Initiative (CFI) within NATO and includes articles on cyber defence, the CFI itself, as well as on JWC's efforts at improving its organisational culture. As has been the case in past editions, the majority of the articles come from JWC staff members, but we are also fortunate to have articles from our strategic partners, the Centres of Excellence, and an article written by General Hans-Lothar Domröse, Commander of Allied Joint Force Command Brunssum.

As the Chief Public Affairs Officer for JWC, I may be a bit biased when I say this is one of the best military magazines I have seen certainly within NATO, but also throughout my career as a Public Affairs Officer. The willingness of General Domröse to take time from his busy schedule to contribute an article speaks volumes for the magazine's reputation within NATO. Again, it would not be possible without the contributions from you, the reader. So, I encourage you to submit articles of interest to your Public Affairs team.

With summer right around the corner (we hope!) there are little signs of life slowing down here at JWC. Our Programme of Work is packed with events that will keep us busy until the summer leave period, which provides everyone with a welcome break from the endless string of planning conferences and meetings that are required to put together an exercise.

We continue breaking ground with many "firsts" for JWC, including the recently concluded exercise TRIDENT JAGUAR 14, where we simultaneously trained two commands from the NATO Force Structure. So, take time to recharge your batteries during the summer leave period and get ready for a busy fall with exercises TRIDENT JUNCTURE and TRIDENT LANCE. Until then, happy reading!

### Commander Daniel Gage

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<AGENDA>

## *Exploring the past as we look forward*



JWC TRJR 14 EXCON in Menorca, Spain.

■ **Clockwise from top left:** Major General Buehler with NATO Secretary General Anders Fogh Rasmussen, 6 November 2013; international media during exercise STEADFAST JAZZ (SFJZ 13) Distinguished Visitor's Day (DV Day); Major General Buehler with Deputy Supreme Allied Commander Transformation (DSACT), Italian Air Force General Mirco Zuliani, during exercise TRIDENT JAGUAR 14 (TRJR 14) DV Day in Menorca, Spain on 10 May 2014; JWC's TRJR 14 EXCON team in Menorca, Spain, on 11 May 2014; Major General Buehler with SACT, General Jean-Paul Paloméros, during exercise SFJZ 13; visit of Norwegian Air Force Lieutenant General Morten Haga Lunde, Commander Norwegian National Joint HQ, to JWC on 7 February 2014. About the visit the Lieutenant General said: "It will contribute to the development of high-quality exercise and training scenarios that are useful to both Norway's defence and within the Alliance." Photographs by JWC PAO and NRDC-ESP PAO.



## Major General Erhard Buehler German Army Commander, Joint Warfare Centre

**W**ELCOME TO THE spring edition of JWC's *The Three Swords* magazine. This issue mainly focuses on NATO's Connected Forces Initiative (CFI), which has a significant impact on how we deliver and conduct training and exercises for the NATO Command and Force Structures. CFI is more than the latest buzz word — it is an imperative for NATO's future.

For the Joint Warfare Centre (JWC), CFI means an increased focus on the importance of the training and exercises we deliver. As NATO transitions from an operational footprint back to a contingency force, we must ensure NATO forces maintain their edge and are ready to respond at a moment's notice to any number of possible scenarios. As our current real world events demonstrate, we can never let our guard down, and training and exercises are a key aspect of preventing that from ever happening. To that end, we must continue to plan, develop and deliver exercises that provide evermore thought-provoking and realistic scenarios that challenge our Training Audiences, whether that is at the strategic, operational or tactical level.

However, CFI does not come without challenges. It will require a deeper level of commitment on behalf of Member Nations. It will require change and greater adaptability in how we go about our business. If successfully implemented and embraced, the end result will be improved readiness and interoperability of our forces. As JWC recently demonstrated during TRIDENT JAGUAR 14, where for the first time, two Training Audiences were exercised simultaneously as NATO Joint Task Forces leading two separate small joint operations, I am confident in our ability to adapt to and successfully meet these challenges.

Now that JWC is firmly marching forward into its second decade of training NATO's forces, and I close in on the completion of my first year at JWC, I can see more clearly what was al-



ready evident to me from the start: JWC has some of the most talented and dedicated personnel within NATO. Because of that talent and dedication, I am fully confident the JWC will be able to deliver its demanding Programme of Work and meet the challenges of the future and CFI. My vision for JWC's future role in CFI is one that: delivers four multi-tier operational level exercises per year; reinforces the links between the forces of NATO Nations; and establishes the JWC as a key element in ensuring doctrine is current and that exercises incorporate concept development and experimentation.

As part of JWC's commitment to taking on these challenges, we undertook the unprecedented process of evaluating, understanding and intentionally shaping our organisational culture. This is a

process that continues today and one that I am committed to and fully embrace. The concepts presented through our partner Senn Delaney are nothing revolutionary, but we must all be mindful of the "shadow" we cast as leaders and continually strive to improve both individually and collectively as an organisation. In addition to shaping our culture, we are currently engaged in a complete review of how we are structured as an organisation, with the end goal of realigning our resources where necessary in order to most effectively and efficiently deliver our Programme of Work.

I would also like to take this opportunity to congratulate NATO's next Secretary General, Mr. Jens Stoltenberg on his recent appointment. He has a history of strong support to NATO and as Norway's former Prime Minister he has demonstrated a commitment to improving the country's defence posture. As Norway's NATO footprint, JWC is proud to welcome Mr. Stoltenberg to the NATO team.

Finally, as your Commander, I am proud to lead such a talented group of professionals. We have many challenges that lie ahead and I am fully confident in JWC's ability to meet those challenges head on. I hope you find this edition of *The Three Swords* magazine useful in improving and developing your knowledge.

<SPOTLIGHT>  
**EXERCISES**





# STEADFAST JAZZ 13

# On FOCUS



**Drawsko Pomorskie Training Area, Poland** — NATO and Partner Nations conducted STEADFAST JAZZ 13 (SFJZ 13) in Latvia and Poland from 2 to 9 November 2013. The event marked the culmination of a series of dynamic and demanding exercises designed to train and test troops and Commanders from the NATO Response Force (NRF). The STEADFAST series of exercises are part of NATO's efforts to maintain connected and interoperable forces at a high-level of readiness. To date, 18 exercises have been held in the series, including SFJZ 13, with elements hosted in 14 different countries. The goal is to make sure that the NRF troops are ready to deal with any situation in any environment. (U.S. Army photograph by 1st Lieutenant Alexander Jansen.)



**By General Hans-Lothar Domröse**  
 German Army  
 Commander HQ Allied Joint Force  
 Command Brunssum (JFC BS)

Photograph by JWC PAO



Exercises ***STEADFAST JAZZ 13*** and  
***TRIDENT JUNCTURE 15***

# Steps to Connected Forces

**"SFJZ 13 was only the first step of a process that will continue throughout this and next year with TRJE 15 on the path to full implementation of NATO's latest Command Structure."**

**N**OWADAYS NATO IS GRADUALLY reducing its presence on deployed operations, therefore, the enduring priority is to ensure this organisation remains vigilant and prepared to meet future challenges and threats with agile, capable and interoperable military forces. In February 2013, NATO Defence Ministers endorsed the project to enhance NATO's training and exercise programme in order to preserve the high-level of training and cohesiveness NATO and Partner countries achieved in the past decade of combat operations. This project has set the standards of the future NATO training activities with the aim to work efficiently together.

Multinational harmonisation is undoubtedly a challenge. It represents a long term effort, but many modern defence capabilities and training activities required to deal with today's challenges are extremely expensive to acquire and execute. Only by involving national contributions can NATO be successful, credible



and satisfy national requests to use money in a smarter way, at a time of severe budgetary restrictions. Put simply, we have got to get more "bang for the buck". Exercise STEADFAST JAZZ 2013 (SFJZ 13) was the direct consequence of this new way of thinking in NATO. In November 2013, about 6,000 personnel from 28 NATO Member Nations as well as three Partner Nations (Sweden, Finland and Ukraine) trained and exercised together in a number of Alliance Nations, including the Baltic States and Poland. It was the first time since 2006 that, in the STEADFAST exercise series, a live exercise (LIVEX) serial was included in a Collective Defence scenario.

**THE AIM OF** the exercise was to certify Joint Force Command Brunssum for its standby command role of NATO Response Force (NRF) 2014. This is a very important task as the NRF is a technologically advanced multinational force made up of land, air, maritime and Special Forces Components that the Alliance can deploy quickly wherever needed. As such it is the "tip of the spear" in terms of NATO's ability to respond to an emerging crisis and is often referred to as the Alliance's "Fire Brigade". Exercise objectives included a desire to promote transparency of the NRF's military capabilities; emphasize its high-readiness posture that allows swift response to short notice operations; exercise joint coordination, planning and preparation procedures; and practice

close cooperation, coordination and liaison with Host Nations, IOs/NGOs and local authorities. A very proactive approach was applied to involve Partner Countries. These Nations were embedded in both the live and the command post exercise serials to enable observation of NATO's operational decision-making process.

As always, an exercise of this scale embraced a number of new threats, cyber, for example, and a range of lessons identified. Of note, throughout the exercise the deployed Combined Joint Task Force (CJTF) HQ worked in a tented structure drawn from, what NATO labels "Capability Package 156". Command Post 156 is an innovative deployable structure conceived to house a headquarters even in the most extreme conditions.

Additionally, the Training Audience was challenged by the SKOLKAN scenario, developed by the Joint Warfare Centre (JWC) Stavanger, after two years of a very involved process shared between NATO leadership, NATO Force and Command structures. Thanks to this scenario, the participants stepped forward towards exercising NATO self-defence operations. SFJZ 13 was a real challenge, but on 8 November 2013, after two weeks of intense, multinational joint military training, the exercise successfully concluded and some weeks later, Joint Force Command Brunssum was certified ready to assume command of the NRF 2014. However, exercise SFJZ 13 was

only the first step of a process that will continue throughout this and next year with exercise TRIDENT JUNCTURE 2015 (TRJE 15), on the path to full implementation of NATO's latest Command Structure.

**EXERCISE TRJE 15** will be a milestone event for NATO and will represent the largest test ever for the NRF. A high-visibility event (planned to incorporate more than 20,000 troops supported by large numbers of aircraft and ships), it will demonstrate that the end of ISAF and the operational benefits derived from that mission does not herald the end of NATO. Exercise TRJE 15 will be on an almost unprecedented scale, involve both Allies and Partners, embrace a so-called "plug and play" capability that will allow Nations to participate as briefly or long as they wish and provide a first-class platform in support of the Connected Forces Initiative (CFI).

With TRJE 15, all Allied Command Operations (ACO) and Allied Command Transformation (ACT) entities will be given a golden opportunity to train together with NATO, Partner Nations and the larger civilian environment, to test the new NATO Command Structure like never before, and to challenge the NRF concept.

In conclusion, the task will not be easy but it will demonstrate and underpin the cohesion that sits at the heart of the Alliance itself. At our HQ we are grateful for this opportunity! ✦



**Above:** General Philip M. Breedlove, SACEUR; General Hans-Lothar Domröse and General Knud Bartels, the Chairman of the Military Committee. **Middle:** Camp Adazi (Latvia), photograph by JWC PAO. **Left:** Guests attending the exercise DV Day on 7 November view an information display about some nations participating in the multinational exercise.

#### FURTHER READING

For these related stories, visit [www.jfcs.nato.int](http://www.jfcs.nato.int)  
 \* NATO Defence Ministers move forward with Connected Forces agenda, [www.nato.int/cps/en/natolive/news\\_104241.htm](http://www.nato.int/cps/en/natolive/news_104241.htm)





During the demanding exercise, which tested and trained Joint Force Command Brunssum (JFC Brunssum) in preparation for its role as the 2014-ready NRF, Commander Joint Warfare Centre (JWC) German Army Major General Erhard Buehler served as the Officer Directing the Exercise (ODE).

"In designing the exercise script, JWC was able to test the Command and Control of the JFC as well as specialised areas such as cyber defence and Ballistic Missile Defence," Major General Erhard Buehler said. He then added that JWC's role in the actual execution of the exercise was that of a stage manager: "The people of JWC are the ones who actually control the type of situations or incidents that the Training Audience (TA) has to respond to, using JEMM (Joint Exercise Management Module), which is a sophisticated software programme. We also provide advisers to the TA and ensure that current doctrine is in line with how they conduct their operations."

#### Clockwise from top:

Two Polish F-16s, photograph by SSgt Ian Houlding GBR Army; NATO Secretary General talking to the journalists; an Italian NH-90 helicopter from ITS Caio Diulio landing on board NATO flagship HNLMS De Ruyter, photograph by NATO; Prime Minister of Lithuania Algirdas Butkevicius (left), President of Latvia Andris Berzins (2nd from left), President of Poland Bronislaw Komorowski (centre), Anders Fogh Rasmussen and Chairman of the NATO Military Committee General Knud Bartels (right), at the press event following the LIVEX demonstration on 7 November, photograph by SSgt Ian Houlding; General Philip Breedlove, SACEUR, meets with Polish soldiers at the Ziemsko Airfield in Poland, 7 November; NATO Secretary General Anders Fogh Rasmussen visits JFC Brunssum Deployable Headquarters, Riga (Latvia). He is accompanied by the President of Lithuania (Mrs. Dalia Grybauskaitė), President of Estonia (Mr. Toomas Hendrik Ilves), President of Latvia (Mr. Andris Berzins) and Commander JFC Brunssum (General Hans-Lothar Domröse).



# JWC Connected Forces

**ON MONDAY 13 JANUARY 2014**, Major General Erhard Buehler, Commander JWC, hosted the JJJ meeting to foster mutual understanding, teamwork and further co-operation between NATO's three training centres. The discussions, led by HQ ACT's Joint Force Trainer (JFT), aimed to better understand what the future might look like for NATO training and how the Centres might best position themselves to meet it. JJJ (also known as the Triple J) represents the three fundamental pillars of NATO's training, namely the Joint Warfare Centre, Stavanger, Norway; the Joint Force Training Centre (JFTC), Bydgoszcz, Poland and the Joint Analysis and Lessons Learned Centre (JALLC), Lisbon, Portugal.

The theme of this year's meeting was *"United in Purpose"*.

"This meeting was a perfect opportunity for the JJJ Commanders to meet and discuss the challenges we all face to provide the highest quality training to NATO," said Brigadier General John W. Doucette, adding: "It was a very open and transparent atmosphere and I greatly appreciate the leadership of Vice Admiral Javier Gonzáles-Huix, DCOS JFT, to unite us in purpose to serve the headquarters and force structure." NATO training has intensified both in scope and complexity due to the end of the combat mission in Afghanistan at the end of this year and the consequent shift from a campaign posture to a contingency. While detailed preparations continue for post-ISAF engagement and the Resolute Support Mission, the training provided for the NATO Response Force (NRF) remains at the heart of the Alliance's Connected Forces Initiative (CFI) to ensure that NATO forces are prepared and seamlessly connected to tackle any future challenges and threats, "even the unexpected", to quote NATO Secretary General.

(By Inci Kucukaksoy, JWC PAO. Triple J logo by Chris Hill, JWC Media Section. To read the full article, visit [www.jwc.nato.int](http://www.jwc.nato.int))

# JWC: ODE EXERCISE DIRECTOR

■■■ As ODE, the JWC led by Major General Buehler was responsible for the approximately 18 months of planning and design efforts that led up to the actual execution of SFJZ 13. JWC then served as the Exercise Control (EXCON) from both Adazi Military Base near Riga (Latvia) and at JWC in Stavanger (Norway).



Major General Buehler,  
COM JWC and Exercise Director



**DID YOU KNOW?** STEADFAST JAZZ involved 3,000 headquarters personnel from JFC Brunssum, its elements, and the JWC, along with personnel from the Baltic countries of Latvia, Estonia and Lithuania, plus an additional 3,000 personnel who participated in a live-fire exercise at Poland's Drawsko Pomorskie Training Area.



Photographs by JWC PAO



"The CFI will be the transformational driver to maintain Allied forces' cohesion, and provide the military capability required to support political decisions."

— **SACT, General Jean-Paul Paloméros**

# The Implementation Plan for the CFI

## FRAMEWORK FOR MAJOR NATO EXERCISES FROM 2016 AND ONWARDS

By Lieutenant Commander Sefa Demirel, Turkish Navy; Lieutenant Colonel Stig Karoliussen, Norwegian Air Force;  
Wing Commander John Watson, British Air Force

RAP Branch  
Joint Warfare Centre

**T**HE CONNECTED Forces Initiative (CFI) is the formulation which aims to shift NATO from current operations to an Alliance-wide, enduring programme in order to enhance and sustain NATO's military preparedness and operational edge in an age of uncertainty. Fundamental elements of CFI seek to maintain NATO's readiness and combat effectiveness through expanded exercises and training, increased exercise opportunities and national involvements, linkages, Partner Nations' involvement and better use of technology, which will all be applied to the overall exercise and training programme. Indeed, the implementation of CFI is one of the key measures addressed in the Chicago Defence Package to achieve the goal of delivering "NATO Forces 2020".

### Chapter Four

The purpose of Chapter Four of the CFI Implementation Plan is to develop an il-

lustrative framework for major NATO exercises from 2016 and onwards. Amongst the criteria, this annex depicts exercise Training Audiences, intensity (high/low intensity tasks), methodology (e.g. CAX/CPX, LIVEX) and the scenario type. However, this is non-binding and has to be considered as a model for real exercise planning. The methodology used for Chapter Four is an overall analysis of the NATO major exercises in terms of demand and supply, and risk. The requirements for major exercises derive from an analysis of NATO's Level of Ambition and an additional (higher) guidance possibly affecting the exercise requirements. After looking at NATO's means and capabilities, Chapter Four continues by giving an indicative example of a five-year exercise programme and an analysis of the gap between the exercise requirements and NATO's capacity to run exercises in NATO-run facilities, such as the Joint Warfare Centre (JWC). It concludes with a consideration of ways to close any gaps and mitigate risks.

Recent strategic documents provide the following specific guidance for major NATO exercises from 2016 and onwards:

- Within each three-year cycle, major NATO exercises are to address the whole range of Alliance missions, including large-scale high-intensity operations, and to take into account ongoing operations as well as NATO Response Force (NRF) obligations.
- Every three years (2015, 2018, 2021 etc.) NATO will conduct a high-visibility exercise (to include a deployable Command Post Exercise/Computer Assisted Exercise) and parts of the exercises, which are combined, joint and live (at land divisional level and joint equivalent for the other components), based on, but not limited to, the NRF.
- In the years where no high-visibility exercises are conducted (2016, 2017, 2019





••• TRIDENT JAGUAR 14 Training Audience in Stavanger. **Right:** Colonel Stephen Williamson, Chief Joint Exercise Division. **Below:** Chief of Defence of the Republic of Latvia, Lieutenant General Raimonds Graube and Commander JWC (also exercise ODE) Major General Erhard Buehler. Photographs by JWC PAO.

etc.), and if force generation allows, other live exercises could be conducted with the ambition of bringing such live exercises to a brigade level or joint equivalent.

- The aim is also to maintain balance between training for Article V Collective Defence and Non-Article V Crisis Response Operations, which encompass both high and low intensity scenarios.
- The first three-year cycle (2016–2018) is considered a trial period.

**CHAPTER FOUR** provides a training baseline in order to match the collective exercise requirements with a multitude of guidance from NATO Nations and explains structures, forces, means and capabilities. The main contribution to this foundation will be a deeper engagement with the Partner Nations and other international institutions to build on cooperative security, and maintain and enhance those partnerships which have developed over the last 15 to 20 years of operations. NATO Command Structure (NCS)-led exercises will be at the forefront of gluing the NCS and NATO Force Structure (NFS) capabilities together. This will also be an example for a robust exercise programme to:

- exercise the NATO Crisis Management system from the strategic to tactical level;

- fully establish and validate the deployable elements of the NATO Command Structure, and further develop the relationship with the NATO Force Structure, particularly with the national HQs;
- maintain and enhance the ability to Command and Control wide range of operations at the strategic and operational level.

### What does this imply for JWC?

Put simply, in the first two quarters of every year, we need to plan and facilitate one Single Service Command (SSC) certification



and one NFS HQ certification exercise. During late summer, the on-standby NRF HQs then need to be activated and validated. The biggest event will probably be the NRF certification, which is given each autumn. With other events on the JWC Programme of Work (POW) running in parallel, the staff will be required to show flexibility in order to accommodate all these events.

### NATO Training Centres

The CFI is postulated as a series of inter-linked activities involving education and training (including exercises), the NRF and technology. As a collective trainer and catalyst for transformation, the Joint Warfare Centre has already started experiencing CFI within its normal business of delivering transformative training and exercises. However, the new NATO exercise programme written in Chapter Four of the CFI Implementation Plan needs to be matched against NATO's anticipated ability to organise and conduct training. In combination, and under present circumstances, the JWC and the Joint Force Training Centre (JFTC) have the ability to conduct annually up to four, joint/combined, multi-level synthetic Command Post Exercises (from Major Joint Operation+ to Small Joint Operations). These levels include linking and/or merging exercises where feasible and within means and capabilities.

The number of major exercises JWC and JFTC can conduct annually is likely





This year's first JJJ meeting was presided over by Spanish Navy Vice Admiral Javier González-Huix, ACT's Deputy Chief of Staff Joint Force Trainer (DCOS JFT), from Norfolk, Virginia, USA. Also attending were the respective Commanders of the JJJ: Major General Buehler, Commander JWC and the host; Polish Army Brigadier General Wojciech Grabowski, Commander JFTC; and Romanian Army Brigadier General Mircea Mîndrescu, Commander JALLC. Photograph by JWC PAO.

to be modified if either Centre has the responsibility for pre-deployment training in support of NATO-led operations. With post-ISAF training requirements yet to be determined, the indicative NATO-run exercise programming described in Chapter Four, and subsequent gap analysis, do not consider any pre-deployment training. Ultimately, it will be a question of prioritising the resources available, based on SACEUR's Annual Guidance on Education, Training, Exercises and Evaluation.

**JWC AND JFTC** are reliant upon NATO Command and Force Structure HQs to

provide the joint enablers in support of Exercise Control (EXCON) functions, in particular the Lower Control, the Side Control (flanking formations) and Opposition Force (OPFOR) Response Cells, together with Subject Matter Experts (SMEs) for the development and execution of the Main Event and Main Incident (MEL/MIL) List scripting before and during exercise play. Experience shows the level of contributions from the NATO Command and Force Structures, and national assets are directly proportional to the volume, complexity, authenticity and intensity of the exercises provided subsequently.

## Conclusion

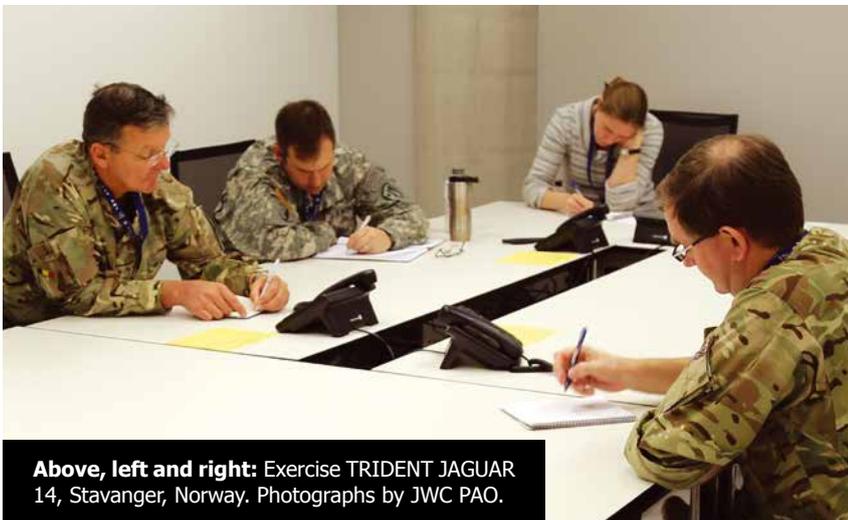
The CFI is a major part of Allied efforts to achieve "NATO Forces 2020". In the NATO context, CFI is everybody's business and for everybody's benefit. We must, though, remain pragmatic, and note that it is the Allies who will make the programme happen through their commitment of forces and resources. Chapter Four offers an indicative programme of NATO-run major exercises. It aims to practice and test joint and component level Command and Control in a multinational setting and to add value to Allies' efforts in preparing their own forces. The programme also offers a balance between an ambitious but also reasonable and achievable exercise plan, within the present realities of NATO and national resources.

Implementation of CFI is a challenge for NATO, but at the same time an excellent opportunity for the JWC to put the warfare element back into the organisation. Will we be overwhelmed? This question will be answered as we conclude TRIDENT JAGUAR, TRIDENT JUNCTURE and TRIDENT LANCE later this year. Conscious planning will be key to successful training events, at the same time we must stand ready to changes to the Training Audience exercise requirements — such as 24/7 operations and introduction of new operational concepts. †



U.S. Army Lieutenant General Frederick Hodges (right), Commander LANDCOM, during a briefing about exercise TRIDENT LANCE 14.

 Interview with Lieutenant General Hodges is on page 61.



**Above, left and right:** Exercise TRIDENT JAGUAR 14, Stavanger, Norway. Photographs by JWC PAO.



## JWC VISION

- **Deliver four multi-tier operational level exercises a year**
- **Reinforce links between the forces of NATO Nations**
- **Establish JWC as a key player for future doctrine and concepts**
  
- **Meet NATO Level of Ambition**
  - **Quality over quantity**
  - **Deliver robust multi-level complex joint training**
  - **Challenge NATO Crisis Management system from strategic to tactical level**
  - **Encourage further integration of NATO and National exercise programmes**
  - **Prepare for both Article V Collective Defence and Non-Article V Crisis Management**

### FURTHER READING

\* The Connected Forces Initiative [http://www.nato.int/cps/en/natolive/topics\\_98527.htm](http://www.nato.int/cps/en/natolive/topics_98527.htm)

\* Connected Forces Initiative: Reshaping Priorities <http://www.act.nato.int/article-2013-1-4>



# JOINT CAPABILITY INTEGRATION AT THE JOINT WARFARE CENTRE

By Lieutenant Colonel Barrett Burns, United States Army  
SO Concept Development, JCID  
Joint Warfare Centre

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**JOINT CAPABILITY INTEGRATION at the JWC is the synchronisation of interdependent processes in the areas of concepts, experimentation, lessons learned and doctrine to enable TRAINING AUDIENCE TRANSFORMATION and NATO INSTITUTIONAL IMPROVEMENT.**

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## Why transform?

In the face of continually evolving political and military requirements and an agile opposition, a force that remains static — practicing existent procedures and doctrine — will become increasingly irrelevant. To drive necessary adaptations, NATO has embraced military transformation as an organic part of both structure and function. This capacity for change, illustrated by the prominence of programmes like the Connected Forces Initiative (CFI), enables NATO's military structure to react in a timely manner to political and military changes. The structure to lead this transformative

capacity starts at the military strategic level with Allied Command Transformation (ACT), created in 2003 as part of NATO Command Structure reform.

Within ACT, Deputy Chief of Staff (DCOS) Capability Development (CAP-DEV) provides guidance and direction for the activities that identify and prioritise Alliance capability gaps, then synchronises the delivery of military and non-military solutions through a holistic capability development approach. Development and delivery of these solutions are made through the ACT Transformation Network, which





## The operational level exercises delivered by JWC also provide NATO with a controlled environment to validate and improve the operational level doctrine in the Allied Joint Publications."

drives continuous reform of NATO forces, structures and processes. The CAPDEV structure to deliver transformation is similar to JWC's Joint Capability Integration Division (JCID), but focused on development and delivery rather than on integration. CAPDEV uses concept development, an experimentation Programme of Work (POW), lessons learned, and doctrine development to generate holistic solutions for prioritised shortfalls. JWC contributes to this effort by including transformative elements in training delivery at the operational level as well as transformative contributions to NATO institutional entities.

### What is Joint Capability Integration?

Joint Capability Integration is the synchro-

nisation of interdependent processes in the areas of concepts, experimentation, lessons learned, and doctrine to enable Training Audience transformation and NATO institutional improvement. It is the logical result of the unrelenting need to transform NATO forces to meet current requirements. The specific implementation of Joint Capability Integration in operational level exercises has been shaped by the development of ACT, along with Peacetime Establishment (PE) and functional changes in JWC. The resurgence of the transformative capacity in JWC has been slow due to the overriding importance of ISAF training in recent years, but as the ISAF mission changes and responsibility for training is shouldered to a greater degree by Joint Force Training Centre (JFTC), JWC has regained the ability to address this critical gap in our capacity to identify and integrate transformational elements into our training.

**THE RE-AWAKENING OF** the warfare capacity in JWC coincides with significant internal organisational changes (cultural re-shaping and the JWC optimisation study) along with external initiatives like the recent NATO Command Structure reform, new NATO Force Structure responsibilities for Joint Headquarters, and the Connected Forces Initiative. Incorporation of these initiatives in exercises provides more opportunities to execute capability integration and experimentation projects.

JWC can leverage these initiatives and projects to increase our institutional understanding of warfare and operational

art in NATO and to improve exercise delivery through training analysis and lessons learned. The operational level exercises delivered by JWC also provide NATO with a controlled environment to validate and improve the operational level doctrine in the Allied Joint Publications (AJPs). To meet these challenges, JWC has re-aligned JCID resources from providing exercise delivery support to leading the transformational tasks central to the Joint Capability Integration mission.

As a result of this re-alignment, Joint Capability Integration in JWC exercises has moved from mainly semi-isolated experiments, like Alternative Analysis (AltA) and internal lessons learned, towards larger roles for concept/capability integration and doctrinal engagement. As we evolve to address the broader Joint Capability Integration transformation mission in a holistic manner, using all JCID functions, we must construct an Exercise Control (EXCON) structure to provide guidance, resources, and accountability. The Capability Integration and Experimentation Coordination Cell (CIECC) will provide this control in exercise TRIDENT JUNCTURE 15 (TRJE 15/Part 1) as a mission tailored structure under the Chief JCID, to support ACT and Training Audience transformation objectives.

### Prioritising Joint Capability Integration exercise objectives

Determining priorities for Joint Capability Integration activities, including independent and interdependent priorities for concepts, experimentation, lessons learned and doctrine, is a process that balances Bi-SC priorities with Training Audience requirements and JWC capacity. The process starts with the analysis of annual training guidance and Bi-SC Directives and guidance regarding capability development. These priorities are then refined and scheduling possibilities are discussed in the course of regular NATO Capability Development Conferences, working groups and VTCs.

For exercise TRJE 15, JCID took initial steps to integrate this cross-organisational planning function into the recent Concept Development and Experimentation Working Group. During the follow-on Exercise Planning Group and Core Planning Team meetings, the JWC Joint Capability Integration representative incorporates



## Mission Tailored CIECC Support

**CIECC must be fully integrated as part of the EXCON structure.**



▪ In each phase of the exercise, a different mix of capabilities from the JCID team is required to perform holistic Joint Capability Integration.

▪ The base functions provided (as required) are:

- Concepts
- Doctrine
- Lessons Learned
- Experimentation

▪ For any Training Audience event, **Lessons Learned and Doctrine** support is the minimum requirement.



an understanding of capability integration requirements, possible experimentation and doctrinal focus areas into the Training Audience priorities. Exercise stakeholders (OSC, OCE, ODE<sup>(1)</sup> and Training Audiences) should express the initial Joint Capability Integration priorities and framework in the Exercise Specification (EXSPEC) document and confirm this framework in the Commander's EXSPEC Confirmation Conference. Once this framework is in place, the Joint Capability Integration work begins in earnest.

Much of the solicitation responsibility for external projects and recruitment of project teams falls to HQ SACT CAPDEV in the early stages. JWC JCID starts development of internally sourced projects and helps ensure that CAPDEV efforts are synchronised with ongoing exercise development. Initial planning and proposals for all projects (internal and external) must be complete for presentation to stakeholders in the exercise planning team during the Initial Planning Conference (IPC). Stakeholder agreement at the IPC enables detailed planning and allocation of resources to prepare for exercise execution phases.

The Main Planning Conference (MPC) serves as a second check, since the exercise construct and Training Audience priorities continue to evolve throughout the exercise lifecycle, in order to ensure

that projects are integrated seamlessly and do not conflict with Training Audience priorities. If a project has not seen appropriate planning or progress by the MPC, it should be cancelled to prevent interference with exercise execution phases. The key to success at this phase is a common understanding between stakeholders that while Joint Capability Integration projects are critical to NATO transformation, the primary purpose of the exercise is to meet Training Audience requirements.

**THE JOINT CAPABILITY** Integration portion of the operational conduct stage of the exercise, beginning with Academics, is supported by the CIECC, which synchronises functional support by the JCID team. The CIECC is the part of EXCON that provides a centralised mechanism to coordinate all Joint Capability Integration functions and support agencies, much as the Experimentation Coordination Cell has done in the past. In each phase (Academics, Crisis Response Planning, Execution and Assessment), a mission tailored team provides support to the Training Audiences and EXCON. The minimum functions provided to each audience are lessons learned and doctrine support (see above). Additional staff support is added to the CIECC team to support the pre-planned concept, experimentation, and capability integration initiatives in each lo-

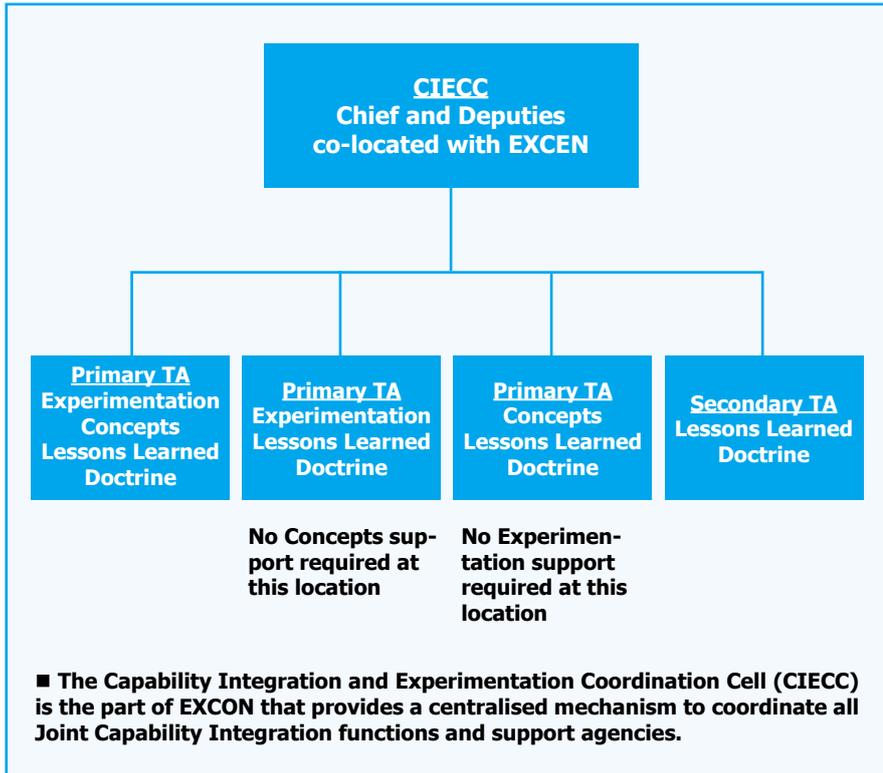
cation. A core CIECC team, co-located with EXCON during the execution phase, synchronises and guides the observations made in each audience. Observers are not limited to JCID or even JWC personnel. In exercise TRIDENT JAGUAR 14 (TRJR 14), contributors included not only each Division in JWC, but also external observers from the Training Audience and the Joint Analysis and Lessons Learned Centre (JALLC). The CIECC provides oversight and coordinates/synchronises the efforts of the entire Joint Capability Integration team.

### JCID structure to support transformation and exercises

To meet the challenge of incorporating these transformative elements into exercises delivered through JWC, the Joint Capability Integration Division (JCID) is structured as four interrelated functional sections: Concepts, Experimentation, Lessons Learned and Doctrine. Personnel are assigned to a section relating to one of these functions, but the interdisciplinary nature of Joint Capability Integration, the limited number of PE billets, and the search for efficiency necessitates developing cross-functional skills in each section.

- **Concepts Section:** The Concepts Section supports concept and capability integration activities in close coordination with





CAPDEV and the wider concept development community. Always scanning the Bi-SC horizon for initiatives to improve Training Audiences' methods, processes, and capacity, the Concepts Section tracks, analyses, and prioritises both new requirements and solutions for integration into exercises. By virtue of this Bi-SC vantage point, concepts staff officers are able to identify beneficial capability integration linkages that can be incorporated into JWC exercises. In the exercise planning process, Concepts staff officers coordinate the efforts of external project sponsors, Training Audience capability integration initiatives, JWC exercise planners, and Subject Matter Experts (SMEs) to ensure delivery of transformative elements that are seamlessly integrated into the exercise design. As part of the CIECC, the Concepts Section develops knowledge of integrated concepts and capabilities to ensure smooth development and execution within the exercise construct. The Concepts Section also has a limited capacity to conduct smaller capability integration projects, as part of a holistic JCID capability integration team, without external sponsors if required.

• **Experimentation:** The Experimentation Section supports experimentation and

capability integration activities in close alignment with HQ SACT programme managers, capability developers, and the exercise community. JWC's training products need to keep step with evolving NATO warfare capabilities, as laid out in SACEUR's Annual Guidance on Education, Training, Exercises and Evaluation (the SAGE). Historically, JWC has been able to harness ACT's Experimental Programme of Work (EPOW) which represents NATO's "state-of-the-art" in capability development. Integration of these experiments into JWC exercises has exposed the Training Audience to new capabilities and has contributed to meeting priorities detailed in the SAGE.

In past years, JWC has integrated experiments examining counter-IED and "Attack the Network", various aspects of the Comprehensive Approach and Civil Emergency Planning into our exercises. JWC has also hosted and participated in experimentation focused on expanding our understanding of Knowledge Development and validating the Comprehensive Operations Planning Directive. The EPOW has gradually reduced in recent years, presenting JWC with a problem in meeting SAGE expectations, which has been partly remedied through JWC's Ca-

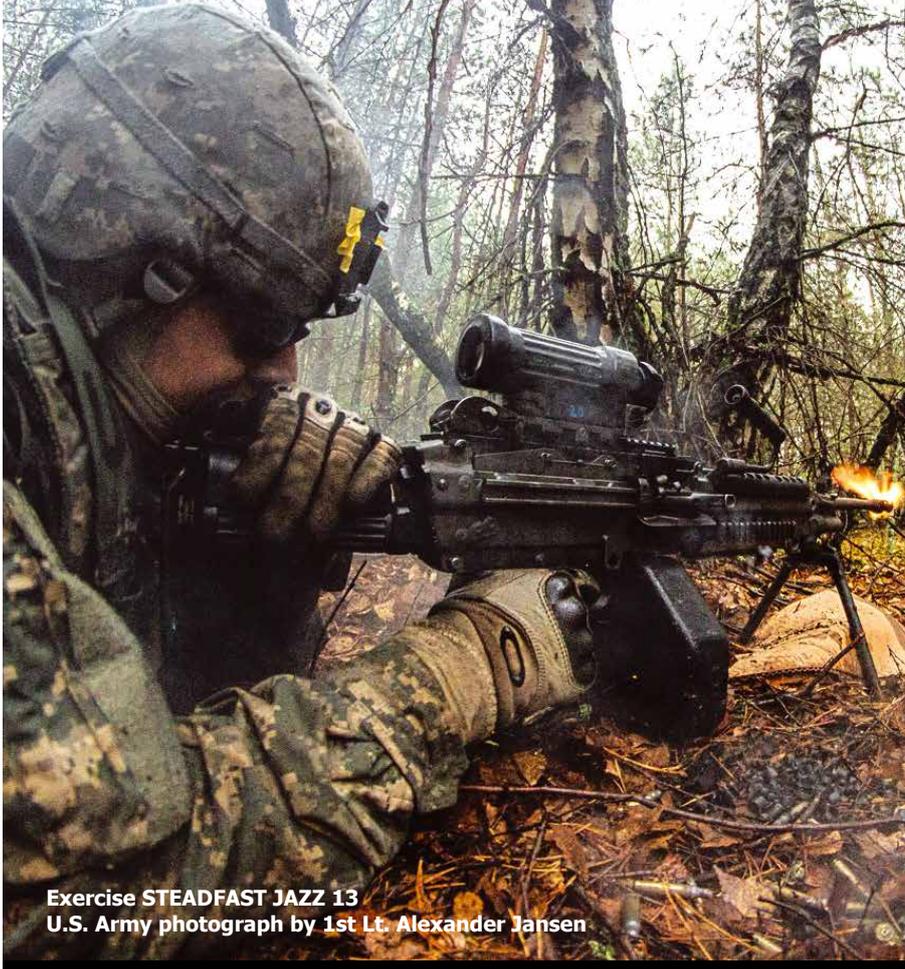
pability Integration Programme. However, the experimentation pendulum has started to swing back and CAPDEV's Operational Experimentation Branch has gathered support for an ambitious experimentation plan in exercise TRJE 15.

Within the CIECC construct for exercise TRJE 15, the Experimentation Section will act as an intermediary, representing experimentation interests to the exercise design team at JWC and representing exercise design interests to the experiment project teams. During execution, the CIECC will liaise closely with stakeholders to ensure that experiments do not compromise training objectives. Building off the interaction between JWC and HQ SACT in exercise TRJE 15 and the transformational intent of CFI, experimentation should continue to play a larger role in exercises during 2016 and beyond.

• **Lessons Learned:** The main task of the Lessons Learned Section is to continually increase JWC capability and capacity to improve those we train. This ongoing learning effect is a synergistic result of the JWC internal lessons learned process, collaboration with external organisations and the development of institutional and operational best practices. Lessons learned collaborators include every entity that we can reach, including the NATO Command Structure, the NATO Force Structure, other NATO entities, and NATO Allies and Partners. The lessons learned team collects and analyses data and observations from not only the JWC EXCON and Training Teams but also from the various Training Audiences. As part of the CIECC during exercises, the scope of the Lessons Learned Section includes but is not limited to the doctrine, experimentation and concepts initiatives being executed in the exercise.

• **Doctrine:** The Doctrine Section leads efforts in JWC to support doctrine development activities and it is the JWC interface with the wider NATO doctrine community. This Section represents the JWC at the Maritime, Land and Air Working Groups, and at the Allied Joint Operations Doctrine (AJOD) Working Group, whose role is to harmonise the 45 Allied Joint Publications (AJP). These engagements shape the direc-





Exercise STEADFAST JAZZ 13  
U.S. Army photograph by 1st Lt. Alexander Jansen

**"SHAPE and the Training Audiences must integrate transformation and development of new capabilities into exercise objectives and training requirements."**

tion received from HQ SACT for doctrinal integration in exercises. When conducting formal doctrine integration tasks in exercises, the Doctrine Section leads the development of the data collection plan and storyline that will stimulate use of the new doctrine. Additionally, the Doctrine Section works closely with the Joint Training Division SMEs and experts from across NATO to identify shortfalls in AJP, which can range from small but important points of detail (e.g. differing definitions of G-day) to total doctrinal voids (e.g. the current ab-

sence of specialist cyber doctrine). Through the CIECC, the Doctrine Section collects observations and generates reports for the AJOD Working Group and the wider doctrine community.

### **Delivering Joint Capability Integration**

The benefits of Joint Capability Integration in JWC can only be realised when each exercise stakeholder is proactive about transformation. SHAPE and the Training Audiences integrate transformation and

development of new capabilities into exercise objectives and training requirements. HQ SACT and the transformational hub led by CAPDEV drive the analysis of requirements and the development of solutions. The sum of interaction at the Bi-SC level in support of Joint Capability Integration initiatives sets the stage for successful inclusion and development of these initiatives in various venues. And similarly, the interaction between Divisions at JWC is critical to the successful execution of Joint Capability Integration initiatives. ✦



Major General Buehler discussing the exercise (TRJR 14) with Maritime Response Cell members. Photograph by JWC PAO.

(1) OSC: Officer Scheduling the Exercise; OCE: Officer Conducting the Exercise; ODE: Officer Directing the Exercise.

### **FURTHER READING**

For these related stories, visit [www.act.nato.int](http://www.act.nato.int)  
\* Innovation in CAPDEV Publication Series,  
<https://www.act.nato.int/publications>



# What is WARFARE?



By Major Fabrice Beurois, French Army  
Concept Development, JCID  
Joint Warfare Centre

**M**ISTAKEN OFTEN as being synonymous with "war"; "warfare" is in fact the how-to and the know-how to wage war. The Joint Warfare Centre (JWC) supports this through transformational training. Therefore, the JWC is a key actor in NATO warfare, whose expertise enables it to fulfil its mission of providing its Training Audiences with a complete set of warfare inputs through Subject Matter Experts (SMEs), Observer/Trainers (O/Ts) and Capability Integrators.

Warfare has been at the heart of a rich and almost literary debate for centuries in which academics, military historians and even philosophers have participated. The origin of the word comes from the Middle English *warre* (war) and *fare* (journey). The Collins English Dictionary defines warfare as *the activity of fighting a war*. The Merriam-Webster English Dictionary refines this definition by describing warfare as *an activ-*

*ity undertaken by a political unit (as a nation) to weaken or destroy another*. In both these rather basic definitions, warfare and war would appear to amount to very much the same thing.

However, as is often the case, things are not as obvious and uncomplicated as they initially seem. Warfare relating to the JWC extends far beyond these simplistic definitions. Can the "Warfare" displayed in modern, silver letters on our Centre's new training facility be captured solely by the definition given by Collins? Where is the firing range or training areas in the vicinity of our barracks? Where does "warfare" sit in the Joint Warfare Centre? Does it lie in our delivery? Is it present in our conceptual area?

If we dig deeper and analytically into this key aspect of JWC, we realise that the Centre's "warfare" is based on three pillars: the more obvious exercise development and training without forgetting the less visible but equally essential capability integration.

If we hone the various interpretations of warfare to encapsulate JWC's scope of activities, we could conclude that the most fitting definition in our case may be the following: *warfare is the set of techniques used by a group to carry out war*. This may be reinforced by quoting a U.S. definition of warfare: "*Warfare is the mechanism, method, or modality of armed conflict against an enemy. It is 'the how' of waging war.*" (Source: U.S. Joint Publication, 25 March 2013). Thus, warfare refers to the general act and art of waging war.

**WARFARE ENCOMPASSES** the two-fold nature of war: art and science. In other words, it is clearly the pendulum between the art of war and the science of war. Indeed, warfare may be perceived as an art. Creativity is needed and the decision-making process generates a unique determination. Moreover, military actions are not fully reproducible. According to Napoleon, the art of war is simple: everything is a matter of execution. Sun Tzu, in his acclaimed text





Photographs by Rapid Reaction Corps - France  
PAO; Sgt. Ezekiel R. Kitandwe, U.S. Marine Corps



**Joint Warfare Centre's 'Warfare' is based on three pillars: the more obvious exercise development and training without forgetting the less visible but equally essential capability integration."**

on the strategy of war, affirms that warfare is not a science: *"Do not repeat the tactics which have gained you one victory, but let your methods be regulated by the infinite variety of circumstances."* Warfare is, however, far from being innate. Frederick the Great used to say that *"a mule may have made twenty campaigns under Prince Eugene and not be a better tactician for all that."*

Warfare can be learned and, contrary to Sun Tzu's approach, may also be defined as a science. Indeed, many characteristics of war, especially war nowadays, depend on science: technological assets, theories, ballistics, statistics, sociology, and computers. All the objective analyses (relative, for instance, to the enemy and the terrain) rely on scientific studies. We may therefore infer that warfare sums up the idea of war not only as an art but also as a science. Based on this, the Joint Warfare Centre obviously has a seat in the warfare community.

Even if our most published and visible deliverables are exercises, the JWC is

much more than a training centre. Warfare in NATO can be summarised as the degree of operational readiness achieved by the units whatever their level of action (strategic, operational or tactical). The JWC has the capacity from the cradle to the grave to deal with and to influence the warfare mindset in NATO. The Joint Capability Integration Division (JCID) with its four sections (Concept Integration, Experimentation, Doctrine and Lessons Learned) is the primary and the most evident actor of the warfare element within JWC. JCID offers a connection between the ACT capability development process and JWC's main product, training events and exercises, and feeds the doctrine and lessons learned processes, thanks to these exercises.

**WARFARE REMAINS**, nevertheless, as a common effort in JWC: the exercise planners and the SMEs also play a vital role by feeding the overall process with data collection and analysis. This warfare role allows

the Centre to be the transformational link between ACT and ACO (also including the NATO Force Structure).

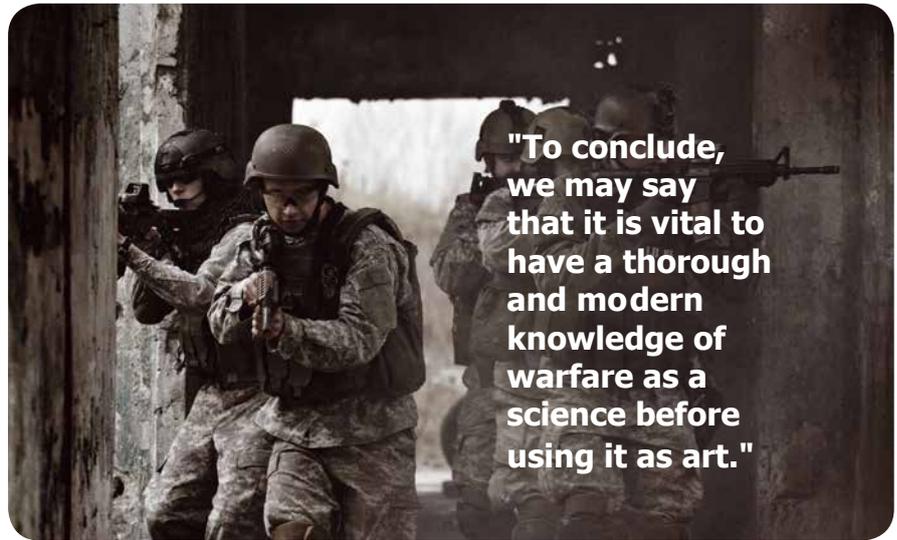
From a broader perspective, the warfare element of the NATO community including the Connected Forces Initiative (CFI) and Smart Defence is becoming increasingly more important due to the readiness posture of the Alliance in the coming years. Moreover, with this new NATO posture due to the end of the ISAF mission, we may legitimately ask ourselves whether "warfare" in NATO will be different in the future.

Following the NATO Defence Ministers meeting on 21 February 2013, it was stated that at the end of the ISAF mission in Afghanistan, NRF will play an even more important role in the CFI framework. This will afford an opportunity to demonstrate the operational readiness of the NATO forces and to conduct a bench test for transformation. The increased number of exercises will provide an excellent opportunity to test Tactics, Techniques and Procedures



(TTPs), to assess the interoperability and to certify the training of HQs and units. NATO exercises must embrace the entire spectrum of operations (from low-intensity to high-intensity), support the interoperability and also mitigate the lack of operational experience of some units. Preparing for the next NATO Summit scheduled in September 2014, the French and German Ministers of Defence declared in February 2014 that interoperability between NATO Members on the one hand and with Partners on the other is key if NATO wants to preserve its ability to operate multinationally. Thus, the CFI decisions and its consequences put JWC at the heart of the future challenges of the Alliance.

To conclude, we may say that it is vital to have a thorough and modern knowledge of warfare as a science before using it as art. The basic nature of war is immutable, whereas warfare is constantly evolving (due in part to ever-advancing technology). Training will become an even more essential element in future years as it alone can offer



the opportunity to test our TTPs, doctrine and skills. We need to bear in mind, however, that effective training without a pertinent warfare approach has little to no use.

In *ON THE PRINCIPLES OF WAR*, the French Marshal Ferdinand Foch stated that "the reality of the battlefield is that there is no time for study there. One simply does what

*one can to apply one's knowledge; and, therefore, to be of any use at all, one must know a lot and know it well.*" Transformation in NATO supports training. It does not compete with it. Therefore, the JWC's mission, roles and responsibilities support the NATO transformational efforts, which is crucial for the Centre's training credibility. †

## <FROM THE ARCHIVE>

### NATO Defence Ministers discuss ways to improve capabilities and training

26 February 2014



**NATO DEFENCE MINISTERS** agreed on 26 February 2014 to move ahead with plans to improve a set of defence capabilities, which are key to dealing with future security challenges. "Through our operations, including Libya and Afghanistan, we have identified the areas where our capabilities do not go far enough or too few countries have them," NATO Secretary General Anders Fogh Rasmussen said.



The recent Libya operation revealed shortfalls in precision-guided munitions, intelligence, surveillance and reconnaissance assets. There are also shortfalls in trained experts to interpret the data from those assets, the Secretary General said. Ministers also looked at ways to maintain the interoperability among Allies and with Partners in the framework of the Connected Forces Initiative (CFI).

Supporting security reforms through capacity building in countries that need help was discussed during the second working session. Ministers also discussed ways to enhance cyber defence and maritime security. "Our task is to make sure that NATO is and remains ready and able to face the challenges of the future and we have taken some important steps today to prepare this with a view to the Summit," said Mr. Fogh Rasmussen. He stressed that since the 2010 Lisbon Summit, "we have achieved much and now we need to maintain the momentum through to the Wales Summit and beyond." ([www.nato.int](http://www.nato.int))



**Right:** Olesandr Oliynyk (First Deputy Minister of Defence, Ukraine) and NATO Secretary General Anders Fogh Rasmussen. Photographs by NATO.

By Lieutenant Colonel Jaques Rousell, French Army  
Media Simulation Section Head  
Joint Warfare Centre

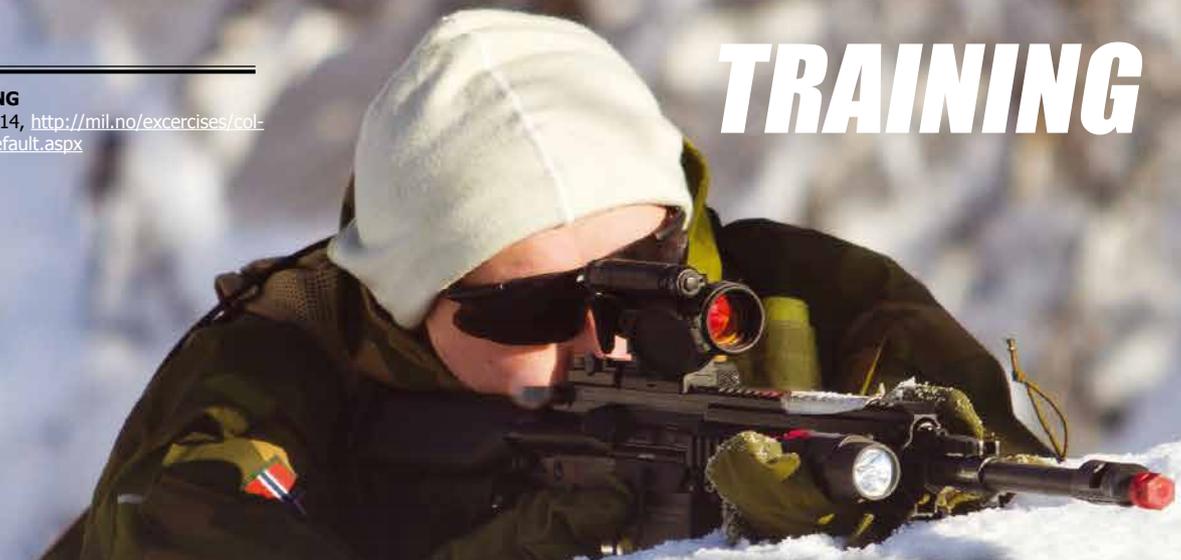
Photograph by Marius Kaniewski  
Forsvarets Mediesenter

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#### FURTHER READING

\* COLD RESPONSE 14, <http://mil.no/exercises/coldresponse/Pages/default.aspx>

# COLD WEATHER TRAINING



## HOT REPORT FROM COLD RESPONSE 14

**WHAT** is the joint live exercise (LIVEX) where the French and Norwegians fought against the British and troops from Quebec called? Exercise COLD RESPONSE 2014! Luckily, for the second time, I was given the opportunity to participate in this huge LIVEX. From 7 to 21 March 16,000 troops (from all services) and 16 Nations took part in the sixth edition of COLD RESPONSE. This Norwegian-led winter exercise was conducted in the northern counties of Nordland and Troms, with the aim of rehearsing high-intensity operations in winter conditions. The scenario was based on a border dispute in the fictitious Nerthus region where the "bad guys" were played by a Norwegian bri-

gade reinforced by the French 27th mountain infantry battalion. The invading troops had to face the Multinational Task Force, composed of Swedish, Canadian, British, American, Danish and Dutch troops.

Actually, I was one of the numerous umpires who were tasked with maintaining exercise safety and facilitating achievement of the training objectives. Together with a highly skilled Norwegian officer, I was assigned to make sure the French battalion obeyed the rules and to monitor both the offensive and the defensive phases, but from a level with no "fog-of-war" around.

Umpires always know the tactical situation from both sides. The exercise was mainly played out as a "free-game", with tactics being the key factor. By using their military experience, the umpires were able to

evaluate a given situation and decide which team demonstrated the best military skills to win the battle. So, thanks to umpire support, Commanders were able to focus entirely on tactical planning and execution.

Weather conditions during an exercise 250 km inside the polar circle were, as you can imagine, a tough challenge, even for French mountain infantry soldiers. Nevertheless, they successfully conducted several audacious tasks, such as a night time hit-and-run raid on skis in a temperature of -28 degrees Celsius!

All in all, it was a great experience for a JWC staff officer who normally does exercise planning at the operational level, and an excellent reminder that, for soldiers, boots on the ground in winter are often synonymous with freezing and pain... †



<SPOTLIGHT>

# Can NATO afford to host exercises in Stavanger?

By Torggrim Alterskjær  
Section Chief Budget and Disbursing  
Joint Warfare Centre

**JUDGING BY** the beer prices downtown, the answer to the question posed above is "No!" However, if you consider the cost of setting up a temporary training location at a minimum cost of half a million Euro and deploying two supporting personnel per operational planner, the obvious question becomes — how can NATO **not** afford to train in Stavanger?

## JWC's "Three Swords"

Let's look at the three main capabilities of JWC as our "three swords": *The first sword* is our personnel, and for this "sword" the demand is greater than the supply. Our capability to plan and direct exercises, produce scenarios and provide media simulations is unique and largely indifferent to exercise location. *The second sword* is our state-of-the-art technology, which is essential for the NATO Alliance, enabling us to set up and host virtual exercises to Training Audiences from around the globe, here, at the JWC. *The third sword* is our state-of-the-

art turn-key facilities in the "perceived-as-expensive" City of Stavanger, which is also the topic of this article. It all comes down to these two primary questions: are we to focus on operational level planning and execution, minimizing the Real Life Support (RLS) footprint or conduct a full-blown, common-funded deployment exercise with all the bells and whistles?

## What is the idea behind turn-key facilities?

With the significant increase in NATO Command Structure (NCS) and NATO Force Structure (NFS) exercises and their associated costs, it is appropriate to re-visit the initial rationale for constructing JWC's turn-key facility in Stavanger. The idea behind turn-key facilities is to provide for NATO a ready-to-use exercise facility so as to avoid:

- the one-time cost and effort of setting up temporary training locations all over

Europe for each and every event. The cost of a temporary location could easily amount to around half a million Euro;

- deploying HQ support personnel and, thus, allocating a fully manned team to set up, run and tear down CIS networks;
- expensive commercial accommodation (JWC arranged close to 25,000 nights in cost-effective military accommodations here in Stavanger in 2011);
- over-committing the scarce NATO deployable CIS resources; since the JWC has a ready-to-use CIS infrastructure at all times;
- significant contractor and Host Nation support required in a temporary facility;
- some functional (J) areas getting fully occupied by delivering the required exercise support rather than focusing on the





**WHAT WE ARE DOING**  
JWC provides NATO's training focal point for full spectrum joint operational level warfare

**DID YOU KNOW**  
JWC hosts the biggest auditorium in NATO

<Training to fight and win>

Joint Warfare Centre



Camp Madla

Photographs by JWC PAO and Jarle Vines

exercise play, where they train on their essential functions within their HQs.

### What can we offer?

The primary issue is the capability to train two HQs in two Combined Joint Operations Centres (CJOCs) simultaneously with a Training Audience of up to 1,000 people. As for events supported within the JWC's Programme of Work (POW), the Centre covers the cost. For any events not supported by the core POW, HQs can still request to utilise the facilities, in which case the JWC will provide support within available means and capabilities, and only charge for the incremental cost.

**Accommodations:** Contrary to popular belief, Stavanger does not host an international oil convention every day of the year, so finding an accommodation should be easier than you think. It is worth noting that even though hotel capacity has gone up and hotel prices have gone down in the last few

years, it is true that hotels in Stavanger are costly, and the national per diem payments are higher for stays in Norway. However, even with the central European reasonable hotel prices, no NATO training facility can default to commercial accommodation. That is why JWC encourages the exercise participants to use the Host Nation military accommodation at Camp Madla, which can accommodate up to 1,200 personnel.

In 2011, close to 25,000 nights were booked at Camp Madla at an average cost of 25 Euro, with breakfast. If we, for the sake of the argument, compare the cost of this to a low average cost of 75 Euro a night in hotels, this would mean a saving of at least 50 Euro a night or 1.25 million Euro potential savings for the nation. What we can say is that we rarely max out the military accommodation capacity. In 2011, 8,500 nights were still accommodated in hotels.

In addition, unlike some other military accommodation options, Camp Madla accommodates maximum five persons per

room and comes with bed linen and cleaning services. There is also access to a gym, Role 1 medical facility, laundry facilities, a bar and a cafeteria with free internet. Camp Madla can also offer reasonably priced single room occupancy for the General Officers.

**Meals:** Breakfast is normally included in the accommodation, be it military or commercial. Lunch and dinner can be arranged at the JWC for around 20 Euro per person per day. This price can compete with most locations, including field kitchens.

**Work-space:** JWC was designed with Combined Joint Task Force (CJTF) exercises around the clock in mind and the maximum capacity for the kind of exercises we support now is still being assessed. Our aim is to be able to surge to a capacity of 1,200 participants including the Exercise Control (EXCON) with full CIS support. It has helped significantly that Host Nation has provided us with access to a furnished





Transportation

second CJOC in addition to the newly built NATO facility, enabling us to train two HQs simultaneously in separate facilities.

An argument against our facility may be that it is very modern and clean, and that it does not provide the feeling and flavour of a tent-based exercise. We can, of course, turn-down the heating and dim the lights to create this feeling. The temporary facilities at Ulsnes that we used previously, got the thumbs up for the slightly rough field conditions and the flair of ad hoc solutions associated with exercises. However, if NATO chooses not to use an ad hoc location, or to test an agency's ability to contract for transportation and provide support to a 300-500-man camp (at a cost of around half a million Euros), then utilising NATO's investment in the JWC for hosting the Training Audience can offer cost savings up to 90 percent.

**Transportation:** Local transportation is offered free of charge by the JWC (for the JWC POW events) through the standard support arrangement with Host Nation.

So, the need for visitors to rent vehicles (as some have done) is not a minimum military requirement. Further, the international airport at Sola is also a military airport that offers free parking, a limited ground and fuel handling capacity and there is no landing fee for the military aircraft. At the Host Nation facility of Ulsnes, there is a harbour that has been utilised by NATO ships before and as a harbour city, there are plenty of good facilities to land significant loads of equipment in Stavanger, should a Nation or NATO choose to erect a deployed bare field camp.

**Real Life Support (RLS):** JWC provides force protection, registration, in-processing, security and safety control. Furthermore, and this may be of interest to some, there are two tax-free shops where you can buy souvenirs, tobacco, drinks and snacks much cheaper than those in the lively and welcoming downtown Stavanger. The fresh air and the hiking opportunities are also complementary as well as fishing in the sea.

**Other arguments than cost:** Cost, of course, cannot be the only factor when NATO chooses an exercise location. However, training objectives for each exercise must be carefully balanced against the cost of achievement of those very objectives. Furthermore, some training objectives may conflict and jeopardise each other. The main benefit, apart from cost, with a turn-key facility, is that NATO can conduct a very focused, realistic and demanding training, integrating all aspects of operational level planning and execution into the same exercise with a very low risk of failure in the supporting systems. This is also our main task at the JWC.

### Conclusion

So, if you recognise that you can save significant amounts on accommodation and ready-to-use facilities and you don't have to rig one-time locations with CIS and tents, the obvious answer is that JWC is the default training location from a cost perspective. And finally, to come back to the starting point of this article, the beer you get downtown does not have to be expensive for our friends since we know a place that sells two for the price of one. *Welcome to Stavanger!* ✦

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### FURTHER READING

To learn more about our city, visit <http://www.stavanger.kommune.no/no/Engelsk/>



In-processing



Canteen



# OPERATIONALIZING CFI

## TECHNICAL APPLICATION OF THE CONNECTED FORCES INITIATIVE

By Colonel William D.  
(Bill) Jones, United States Army  
Chief C4 Event Support  
Branch, Joint Warfare Centre

"There is an opportunity to put a **NATO point of presence** at the **Joint Multinational Simulation Center** in Grafenwoehr. This will expand **NATO training capabilities** and offer another capable venue to **further the CFI.**"

**T**HE CONNECTED Forces Initiative (CFI) was created to complement Smart Defence and achieve the goals of NATO Forces 2020. The key tenets of the CFI are *readiness* and *interoperability*. One of the ways to achieve interoperability is through making better use of technology. Our tenth anniversary issue (July/October 2013) briefly described how the Joint Warfare Centre (JWC) supports the technological aspects of the CFI. In this article, I will expand on that theme.

**TO UNDERSTAND CFI** you have to understand its component parts. The CFI Implementation Plan describes actions and programmes that, worked together, will achieve the end state of connected forces by 2020. The plan consists of eleven chapters. Even though these chapters describe technological solutions the problem is, for most people, CFI is basically conceptual. If something exists in concept, the challenge becomes how to *operationalize* it so it is both of use to Commanders and staff and also recognised as worthy of sustainment and support by leadership.





**We need an initiative to complement Smart Defence. One that mobilises all of NATO's resources so we strengthen our ability to work together in a truly connected way. I call this the Connected Forces Initiative."**

Anders Fogh Rasmussen, NATO Secretary General  
4 February 2012

As training professionals, we at the JWC are interested in the practical application of the CFI — tools we can use to help Commanders meet training objectives. One of the primary ways we do that is through the use of technology in the following areas:

- Capability Development and Integration,
- networks,
- simulations,
- Knowledge Management.

### Capability Development and Integration

TIDE SPRINT is the premier think tank in NATO to formulate and define future interoperability solutions. The Coalition Warrior Interoperability eXploration, eXperimentation and eXamination eXercise (CWIX) tests the physical instantiation of those concepts. The JWC is a key contributor to both. Our efforts will ensure we continue to be a leading venue for the experimentation and doctrine development that facilitate the implementation of the CFI.

### Networks

The technical aspect of networking can be described, without exaggeration as complicated. Network solutions must be flexible enough to meet operational requirements yet rigid enough to meet engineering standards. This strategy of mitigation is not without precedent. The Afghan Mission Network (AMN) was built of the component parts of national networks, and then expanded to be an operational success.

The Federated Mission Network (FMN) is the next generation of interoperable networks. FMN refers to a capability as opposed to a discrete "network" and is the natural successor to the AMN. The FMN capability is composed of rules and policy for governance as well as the technical speci-

fications for access and operation. The JWC contributes to the doctrine development and implementation of the FMN. TRIDENT JUNCTURE 15 will be a milestone for FMN capabilities development.

### Simulations

At certain levels of command, live training becomes impractical. This is where constructive simulated exercises become invaluable to a Commander. For the JWC, our primary contribution to the CFI will be through the planning, preparation and execution of Computer Assisted Exercises (CAXs) through simulations.

### SIMULATIONS AND SCENARIO

are inextricably linked. Modern scenarios like SKOLKAN II make heavy use of products like Intel, geo and targeting data. This summer, the JWC will co-host the "Training Centres Conference on Collaboration for Settings, Scenarios and Simulations" (TS3) from 24-26 June 2014. This is designed to be the kickoff conference of a permanent collaboration between NATO and national simulation centres. The conference is not about building the content of scenarios but to develop relationships and processes for sharing information and interoperability. The intent is that this be an inclusive, collab-



Prof Erdal Cayirci (right, CAX Branch Chief) and Mr. Stuart Furness during a discussion.





"The CFI is not a future concept. It is tech-enabled and substantive progress is underway. At the JWC, we advance the CFI agenda every day."  
Photographs by JWC PAO.

SKOLKAN II meeting at JWC.

orative session wherein all Partner Nations have the opportunity to contribute.

### Information and Knowledge Management

The JWC is in the last few months of an Information Management/Knowledge Management (IM/KM) pilot programme. The information gained from this study will inform the future structure and business practices of the JWC. Other NATO bodies will be able to take best practices and our lessons learned and apply them to their organisations. It is important to be NATO compliant as we derive an IM/KM solution that is tailored for this HQ. The JWC is linked closely with NATO IM/KM initiatives. JWC personnel are members of the NATO Information Management Authority (NIMA) Working Group and collaborate in the development of the NATO Information Portal (NIP).

### Challenges and opportunities

The way ahead for connecting NATO forces faces substantive challenges. First and foremost are issues of security protocols, information assurance and computer network defence in a cyber-environment. The physical transfer of data is a purely technical solution. We have the means to do that now. The challenge is to agree on policy that is politically and legally acceptable to Member Nations. Business and trade agreements must be taken into account. Some nations simply do not have the flexibility of some of the larger

NATO Partners to share software and intellectual property. National rules may prohibit the practice. We have at our disposal opportunities to work through these challenges. Every year, the United States European Command (EUCOM) conducts the Command and Control (C2) interoperability exercise COMBINED ENDEAVOR (CE) at Grafenwoehr, Germany. CE hosts 38 countries, many of them NATO, to develop new methods of sharing information, interoperability and operations in a cyber-environment. This exercise has been an unqualified success. However, to date neither the JWC nor the Joint Force Training Centre (JFTC) has played a role. There is an opportunity to put a NATO point of presence at the Joint Multinational Simulation Center (JMSC) in Grafenwoehr. This will expand NATO training capabilities and offer another capable venue to further the CFI.

**AN AREA WITH GREAT** promise is the JFTC-led initiative to connect NATO and national simulation centres for Education, Training Exercise and Evaluation (ETEE). In the summer of 2014, the JFTC will brief a concept of operation that describes the unification/connecting of national assets beginning 2015 and culminating with full interoperability by 2020. Finally, our partners in the NCIA will reorganise for more efficient operations. Centralisation of ETEE services at the JWC will ensure currency of mission and responsiveness of service.

### Proof of principle: Interoperability in exercises

Distributed exercises are tangible evidence of interoperability and a prime venue to test and prove/disprove connected force theory. The most visible evidence of that assertion is the success of the exercise STEADFAST JAZZ (SFJZ) conducted in the fall of 2013. What made SFJZ 13 the model for future interoperability was the scope and level of its complexity. SFJZ 13 was conducted on multiple levels of command and distributed to eleven different locations. It combined Allied forces with a national exercise (BALTIC HOST) and embedded air (EAGLE TALON) and Ballistic Missile Defence (BMD) training. TRIDENT JUNCTURE 2015 will be the next step toward achieving the goals of NATO Forces 2020.

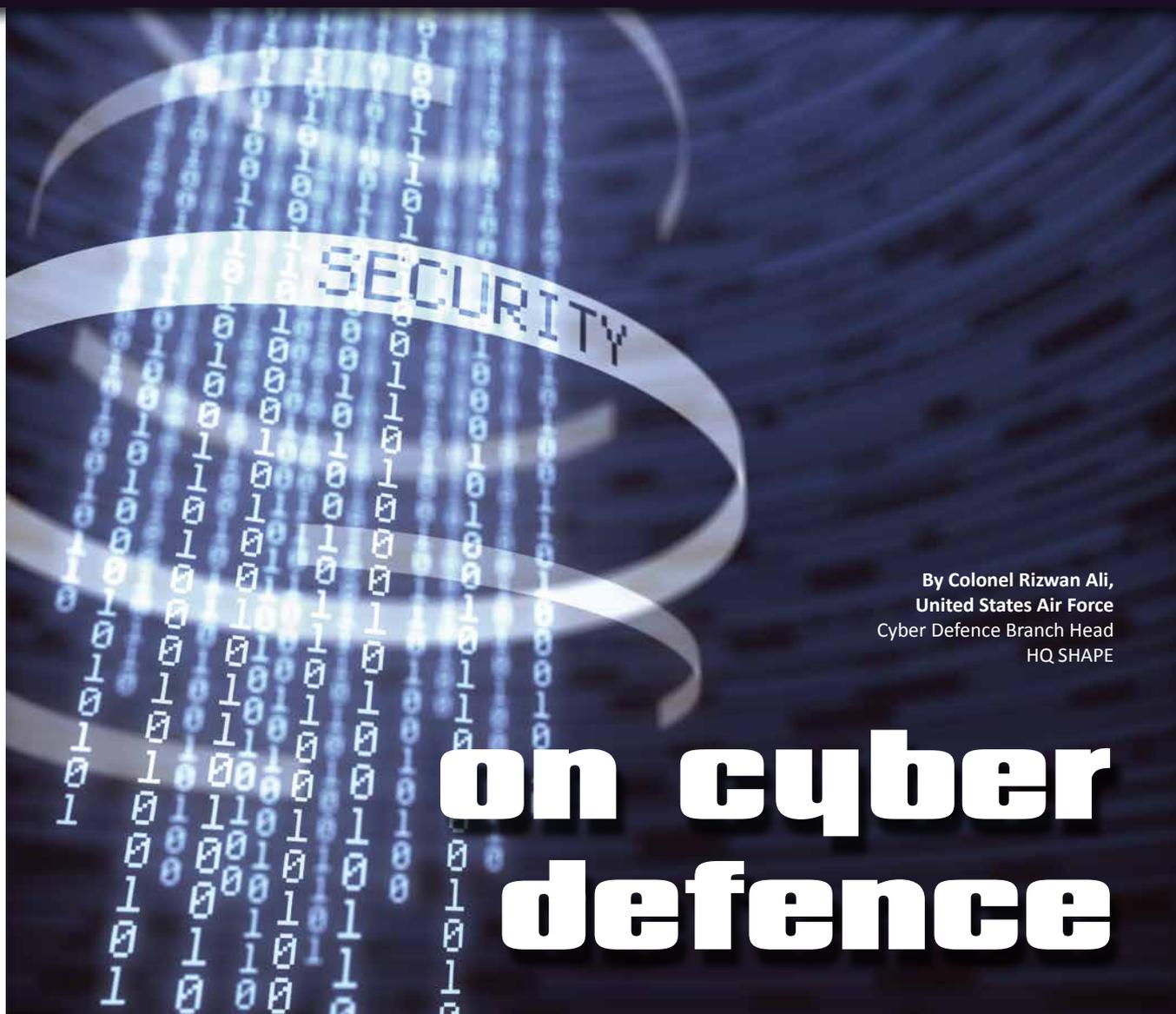
### Conclusion

The CFI is not a future concept. It is tech-enabled and substantive progress is underway. At the JWC, we advance the CFI agenda every day. Our capability development, simulations, exercise support planning and Knowledge Management solutions all stem from current user requirements. Those requirements are centered on leveraging technology to work interoperably and more efficiently – universally consistent with the concept of the CFI. The next spiral of the CFI Implementation Plan will be out late in the second quarter of 2014. ✦

### UPCOMING EXERCISES



**Preparations for LOYAL JEWEL 15:** Royal Navy Vice Admiral Peter Hudson CBE, Commander Allied Maritime Command, with Brigadier General John W. Doucette, JWC Chief of Staff.



By Colonel Rizwan Ali,  
United States Air Force  
Cyber Defence Branch Head  
HQ SHAPE

# on cyber defence

## AS A COLLECTIVE DEFENCE

organisation, NATO's stance on cyber relies heavily on Member Nations to protect their own networks and Computer Information Systems (CIS). NATO's responsibility is the protection of NATO owned networks. Within this framework, the NATO Communications and Information Agency (NCIA) provides the bulk of the cyber defence capability to NATO to include the Strategic Commands, Allied Command Operations (ACO) and Allied Command Transformation. Knowing this basic information, one may think that Strategic Commands, particularly ACO does not play a major role in NATO's cyber defence. This would be an incorrect assumption. ACO, and its subordinate commands, work very closely with

NCIA and NATO Headquarters to keep the Alliance's cyber defence posture strong. To build a strong cyber defence, there are many elements that need to come together into a cohesive whole. Some of these elements are tangible while others are less tangible and require processes and procedures.

One way to view cyber defence is to think about a walled fortress. Some of you may be thinking that a fortress is an outdated analogy when we are dealing with cyberspace. I disagree. Using the fortress analogy is a good way to explain the four critical parts required in order to build a strong cyber defence in any organisation, especially a complex organisation such as NATO. Building a robust structure for cyber defence takes four basic parts:

- (1) situational awareness;
- (2) plans;
- (3) exercises; and,
- (4) business continuity.

Let's go through each of these parts in more detail:

**Situational Awareness:** If we go back to the walled fortress analogy, situational awareness can be viewed as stones that make up the wall. Each set of stones around a fortress has its own unique shape and characteristics. They are likely different sizes depending on the strength required. In the same way that the walled fortress is made up of stones of different sizes, shapes and characteristics, situational awareness is also





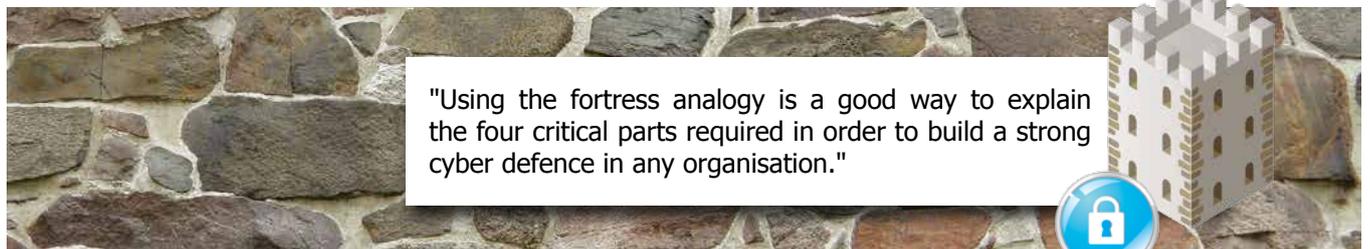
## // (...) from an operational military perspective, cyberspace and cyber defence are very similar to the way we conduct sound military operations in the air, land and sea domains."

made up of varying elements. We can think of the large strong stones as the foundational information we need for good situational awareness. This foundational information is sometimes referred to as strategic-level situational awareness. ACO relies on a variety of open and classified sources of information to build a strategic-level view of threats in cyberspace. The specific sources used are

for their personnel. The last types of stones that make up a wall fortress are the smaller stones. These stones fill in the gaps between the large and medium stones. They provide the needed strength to fix any holes in the wall and can be thought of as tactical-level situational awareness. NATO as a whole relies in large part on NCIA to provide tactical-level situational awareness. Much of this information comes from open sources such as advisories from major software vendors and advisories from antivirus vendors which identify vulnerabilities. These advisories often recommend specific tactical-level configuration changes to our systems and updates to our software. If these advisories are not implemented, adversaries can use these vulnerabilities to gain unauthorized access. In short, situational awareness for cyberspace requires obtaining a broad range of products and fusing these into a cohesive product that the NATO and ACO leadership can use to make informed decisions.

operational-level plans, which fit into the strategic plans. Each of these plans has cyber defence elements. One key point about these plans is that without good situational awareness, as described above, it is very difficult to write appropriate plans. Military plans at each level depend on good situational awareness to know how the plans should be written in order to respond to potential adversaries.

**Exercises:** So, now that we have built our walled fortress, we can just sit back and relax, right? Of course not! Every walled fortress had a legion to defend it against attacks. These troops did not wait for an actual attack to begin testing their skills. They practiced their skills regularly to make sure they were ready in case they were needed. During these practices, the defenders did not just test their own skills. They also tested the walled fortress to make sure fortress was strong and if the fortress needed reinforc-



"Using the fortress analogy is a good way to explain the four critical parts required in order to build a strong cyber defence in any organisation."

not relevant for this discussion. What is important to know is that this strategic-level information allows the leadership to look beyond the immediate vulnerabilities on the networks to see future cyberspace threats.

The medium sized stones can be viewed as operational-level situational awareness. For ACO, operational-level situational awareness is handled mostly by the ACO subordinate commands such as JFC Brunssum, JFC Naples, the Single Service Commands, and the NATO CIS Group. They focus on ensuring they have a good picture of the vulnerabilities on the networks and systems. The identification of these potential vulnerabilities may include determining if there are any single-points-of-failure, back-up power and air conditioning to network equipment, and if they have a robust cyber security training programme

**Plans:** Fortress walls need more than just irregular stones to be stable. They need good, strong mortar. There is a critical linkage between the stones and the mortar. Stones alone do not provide the needed strength. Mortar alone does not provide the stability. Both stone and mortar are needed to be used together to give the wall strength and stability.

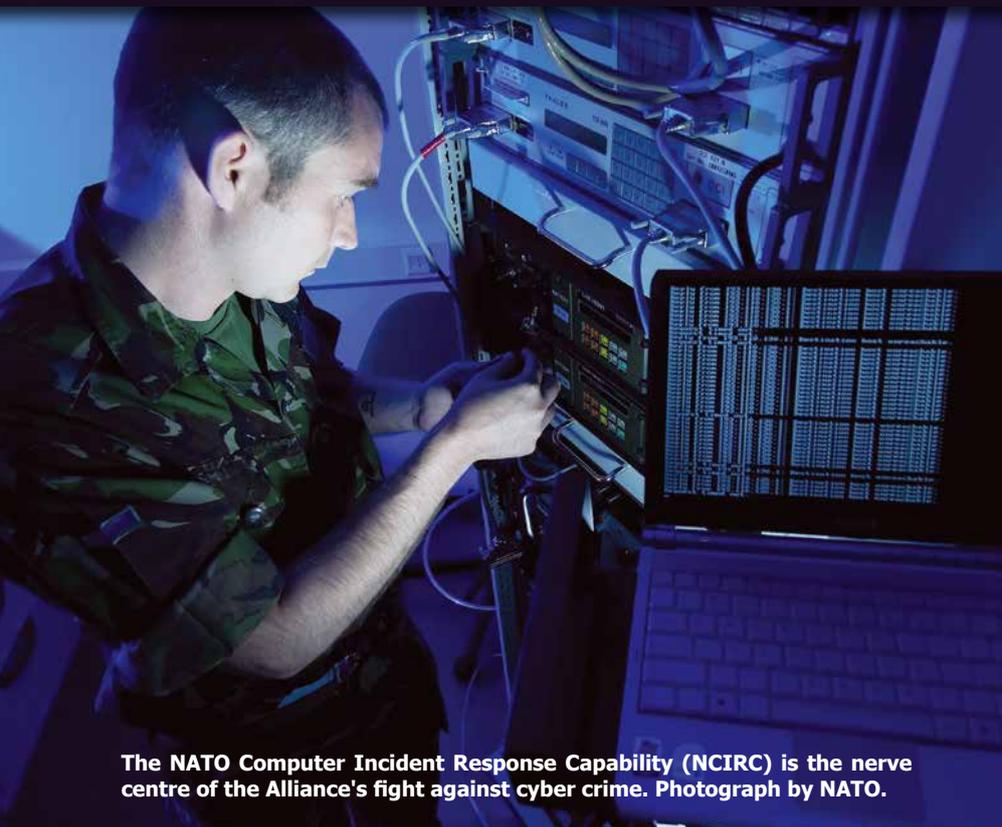
In the military, our plans can be thought of as that crucial mortar in our cyber defence fortress. The military relies upon many plans to ensure everything related to military operations is considered prior to conflict. At ACO, we have a number of plans addressing scenarios which would require military action. Cyber is a necessary and vital part of each of these plans. SHAPE handles the development of strategic plans while ACO subordinate commands develop

ing, they could find out what type of reinforcement was required.

In this same way, the military uses exercises based on likely scenarios to see if their forces are trained properly and ready. Military exercises also help test defences to see which need to be strengthened. Addressing these can take the form of adding additional elements to get better situational awareness or to make the military plans more thorough.

**NATO USES** a multi-faceted approach to cyber exercises. In the first set of exercises, ACO and subordinate commands incorporate cyber scenarios into the existing exercise scenarios. These exercises are large and have more than just cyber defence personnel participating. The exercises' cyber injects are based on likely cyber threats, to include acts of aggression, acts of sabotage or even acts of





The NATO Computer Incident Response Capability (NCIRC) is the nerve centre of the Alliance's fight against cyber crime. Photograph by NATO.

nature. The exercises' cyber evaluation teams determine how well the exercise players are able to continue performing their mission despite degraded or disrupted cyber systems.

The second set of exercises is dedicated to training and evaluating only the cyber forces and cyber defences. Since these exercises are limited in scope involving only NATO's cyber forces, not the broader force structure, a greater amount of tactical-level focus can be achieved to test and validate NATO's cyber defences. Both these types, the large-scale full-formation and dedicated cyber defence exercises are needed to ensure all aspects of NATO's cyber defences are looked at thoroughly.

**Business continuity:** The last piece of building and operating our walled fortress is to work through what we call "what-if" scenarios. In these scenarios leaders look to see what can be done to continue military operations in case something potentially catastrophic happens. In a walled fortress, "what-if" scenarios could take the form of determining how the legion could be controlled even if its primary signalling methods were destroyed. Or how will food or water be conserved in case of prolonged

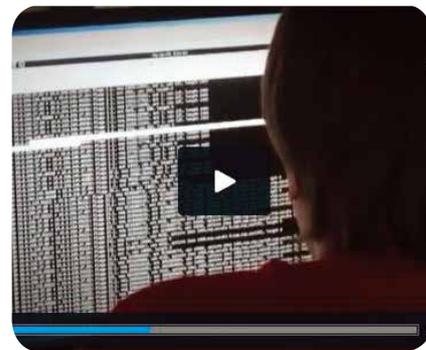
attack. In ACO, we call the results of these "what-if" scenarios for cyberspace "Business Continuity Plans". Simply put, the military needs to be able to operate in an environment where CIS capabilities are either degraded or denied. Depending on the potential threat, "Business Continuity Plans" can be as dramatic as determining how to conduct operations without any CIS support. Or the plan could be simpler involving re-prioritising other lower priority resources such as communications links or power generation facilities to keep higher priority operations going.

### Conclusion

Cyberspace and cyber defence, on the surface, seem like complex, new entities that need their own set of paradigms. But as you can see from the walled fortress analogy, from an operational military perspective, cyberspace and cyber defence are very similar to the way we conduct sound military operations in the air, land and sea domains. We need to leverage expertise developed over the centuries in the three physical domains and apply these to the cyber domain. ✦



Simply put, the military needs to be able to operate in an environment where CIS capabilities are either degraded or denied."



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\* NATO Cooperative Cyber Defence Centre of Excellence, <http://www.ccdcoe.org/>  
\* Attacks from cyberspace: NATO's newest and potentially biggest threat, General Philip Breedlove, SACEUR, <http://www.aco.nato.int/saceur2013/blog/attacks-from-cyberspacenatos-newest-and-potentially-biggest-threat.aspx>



CYBERSPACE IS RAPIDLY EMERGING AS A "FIFTH DIMENSION" OF WARFARE, EVEN IF NOT OFFICIALLY RECOGNIZED AS ONE BY NATO.

# CYBER DEFENCE IN OPERATIONS

By Peter Hutson  
Analyst CIS, JCID  
Joint Warfare Centre

## Introduction

The cyber defence (CD) capability at the operational level is based upon the concept that a Joint Force Commander needs to identify and manage operational risks inherent in environments under cyber threat. This article examines the status of the current NATO CD capability and the unique nature and challenges of CD in operations as evidenced in the context of the NATO Response Force (NRF) exercise programme.

Most recently in November 2013, during exercise STEADFAST JAZZ, JFC Brunssum (JFC BS) and its components completed their operational level collective training and received their NRF certifications in a scenario that included a cyber-contested environment. The scenario reflected some of the asymmetric threats in the real world, in which cyber attacks against NATO are becoming more frequent, organised, and disruptive. Alongside the more traditionally recognised air, land, maritime, and space domains, cyberspace is rapidly emerging as a "fifth dimension" of warfare, even if not officially recognised as one by NATO. Acknowledging this pervasive and dynamic threat, NATO has accelerated its cyber effort over the last three

years and responded with a steady stream of initiatives and activities to move the cyber defence capability rapidly forward. Since 2011, through its NRF STEADFAST collective training exercises, JWC has had the tasking and opportunity to witness those cyber operational level challenges firsthand, and to watch the development of this important capability.

## Deploying with the cyber capabilities you have

Static commands and organisations — that is, those NATO entities that have a permanent physical infrastructure and enduring organisational mission — have enough challenges on how best to respond to the more routine cyber threat when conducting their peacetime missions. A "deployed" multinational Joint Task Force (JTF) on its way to war, however, has these same challenges and many more.

**DURING OPERATION** Iraqi Freedom, the U.S. Secretary of Defense Donald Rumsfeld, responded to a query about a lack of armoured vehicles with the quip that "you go to war with the Army you have

— not the Army you might want or wish to have at a later time." This quote reflected his sentiment that a deployed Commander cannot wait for the ideal capabilities to be in the right place at the right time when a crisis erupts, but one has to deploy and conduct operations with the capabilities and resources available. This statement rings true for cyber defence in NATO operations as well. Despite NATO's remarkable progress over the last three years that includes development of the cyber defence concept and policy, organisational constructs, capability packages, education and training requirements, and a comprehensive Bi-SC "Cyber Defence Action Plan" — much work remains. Nonetheless, the deploying Commander must be prepared to deploy and cope within existing means and capabilities.

**DOTMLPFI perspective.** NATO often measures the status of its capabilities through the lens of a DOTMLPFI construct; that is, through an examination of the maturity levels of Doctrine, Organization, Training, Materiel, Logistics, Personnel, Facilities, and Interoperability. The next several paragraphs will examine three of those strands:



Cyber Defence Doctrine, Organisation, and Training. There is no doubt that NATO cyber professionals who are in the "know", can point to the flurry of point papers, meetings, draft handbooks, workshops, conferences, and exercises that suggest and indeed, reflect significant progress of CD as a NATO capability and positive momentum. Synchronising and streamlining such diverse and short-fused activities amongst 28 Allies, nonetheless, remains a challenge. And, as the most recently certified NRF staff has witnessed — and as measured against the DOTMLPFI capability yardstick — operational CD is in its relative infancy with NATO.

• **Doctrine:** There is little to no NATO CD-specific doctrine, much less agreed cyber-related definitions or taxonomy for cyber for the deployed Commander. This lack of doctrine, however, is made more problematic by the fact that there is approved NATO Doctrine for Computer Network Operations (CNO) and Computer Network Defence (CND) in the context of Information Operations Doctrine (AJP 3.10)<sup>(1)</sup>, and for Information Assurance within the context of the AJP-6 series — both of which are not always consistent with approved NATO CD policy and developing NATO cyber taxonomy. Unfortunately, operational missions can neither afford to wait for resolution of doctrinal voids nor for absolute clarity; the deployed Commander must interpret and rationalise which documents are valid or invalid and which ones should be used to develop staff functions. The NRF staff must study top-level documents such as the Cyber Defence Concept and Policy, distill nuggets that are relevant to the NRF and operations, and ultimately translate NATO's general CD aims and objectives into actionable plans and SOPs. In the absence of an approved construct, assumptions must be made in order for the mission to be planned and executed.

During the STEADFAST series of exercises over the past three years, this has been the default situation that the JFCs have had to face. Yet, this situation should neither be surprising nor represented negatively. As with other new or evolving capabilities (such as C-IED, Knowledge Development, or STRATCOM), exercises

offer the opportunity to "tease out" the issues and bring shortfalls and gaps to the forefront. The STEADFAST series has offered a venue not just for training and enforcement of tradition skillsets, but also as a "doctrinal laboratory" for focused examination and analysis of capabilities and functional areas in the context of a relevant scenario, and a real staff — which is confronted with the challenge of planning and executing an NRF mission.<sup>(2)</sup>

• **Taxonomy:** Linked to the creation of CD doctrine is the need to have a common cyber taxonomy, which would facilitate the implementation of NATO Cyber Defence Policy through a shared understanding of terms.<sup>(3)</sup> Language and words do count in the cyber business, as they underpin the logic behind development of staff functions, processes, organisation, and legal tools such as Rules of Engagement (RoE).

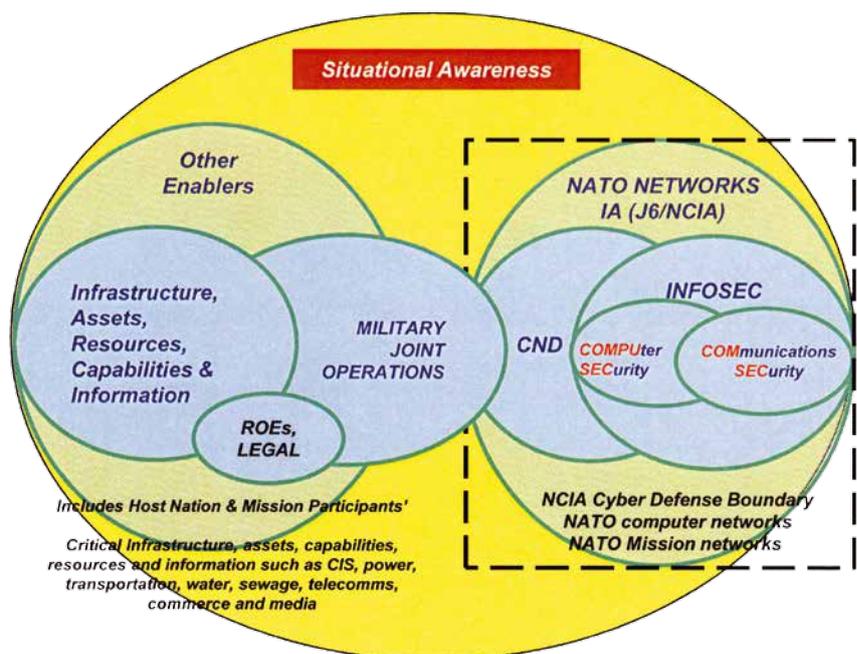
What does the word *cyber* actually mean? Where does *cyberspace* begin and end for the operational Commander? For example, how does a staff differentiate between virtual cyber Joint Operational Area (JOA) and the more traditional land, air, and sea domains defined by terrain and geographical boundaries? How is CD different than *Computer Network Defence*

(CND)? Where do *Information Assurance*, *INFOSEC*, or *CIS Security* fit in the context of *Cyber Defence*? What is a *cyber-attack* as opposed to a *CIS Security Incident*?

During JWC training events, the deployed Commander and his staff have had to delve into often conflicting taxonomy, policy nuances, definitions and voids to create a baseline from which to go forward. In SFJZ 13, JFC BS utilized the following diagram in its staff Cyber Defence Working Group Terms of Reference (TOR) to promulgate its understanding of the taxonomy and organisational inter-relationships. Such models have varied significantly from exercise to exercise and reflect the need for establishing clarity.

• **Organisation:** No standard organisational structure or model exists yet for CD in NATO for deployed operations and the last three operational exercises have reflected different approaches with common themes. As with NATO's C-IED capability, one common approach has been to establish cross-functional staff entities to harness expertise for application and focus to cyber problems. These entities require inter-staff and external coordination mechanisms. And, most importantly, another common theme has been the growing recognition

**Cyber Defence Cell AOR**





and lesson that the CD in the Joint Task Force (JTF) must be J3-led to best address critical operational dependencies and mission enablers.

**CD within the JTF HQ:** In harmony with recent Joint Force Command Naples (JFC NP) work, during SFJZ 13, JFC BS provided one representative example of how to organise the staff for cyber defence. As a first step, JFC BS created a Cyber Defence Cell (CDC) under J3 leadership that was augmented by suitable Host Nation LNOs and available NATO-sourced cyber SMEs. The CDC established, monitored and assessed changes to the cyber elements within their purview to include assessments on NATO, Host Nation, and other critical infrastructure, assets, capabilities, resources and information. With support from J6/NCIA<sup>(4)</sup> staffs, the CDC was responsible for reporting and coordination with NCIRC<sup>(5)</sup> regarding cyber events. The J6/NCIA staffs continued to retain primary responsibility for Information Assurance and INFOSEC, while the J2 staff provided the threat picture for cyber as part of their standing tasks. The J3 and J3/5 staffs were responsible for leading in planning and prevention measures, and developing options for response and recovery (the consequence management).

The CDC formed the core part of a broader standing Cyber Defence Working Group (CDWG) that was comprised of Chairman: J3 (Chair), J3 (Secretary), J6 (core member), J2 (core), J5, LNOs from other key stakeholders<sup>(6)</sup> (as required), LEGAD, PAO, and STRATCOM. With this level of participation, the CDWG was able to coordinate and synchronise its CD activities internally and externally.

**External Linkages:** Also as seen in exercise SFJZ 13, the CDWG was responsible for interaction with external entities including the Host Nation. The CDWG supported the JTF Commander in: (a) identification of critical vulnerabilities; (b) prioritisation of risks; and (c) implementation of targeted cyber defence measures with a view to prevent and mitigate the impact of a cyber-attack. Active involvement of liaison officers and inputs from the component commands, other theatre forces, and IOs/

NGOs were essential to the assessment, campaign planning and synchronisation.

**Outputs:** As there is currently no NATO CD doctrine or standard organisation, the CD outputs of the above organisational elements had to be developed based on best practices of previous exercises. Some of the key products included: (a) a Cyber Prioritised Asset List (CPAL) including its updating and maintenance throughout the mission; (b) Cyber Risk Assessment Prioritization Matrix (CRAM), which identifies cyber dependencies, "risk owners", and contingency plans; (c) Incident Handling System to include WARPs (Warning Advice and Reporting Points), which were mandated at all deployed locations and provided the focus for reporting on CD incidents to the CDC; (d) Cyber Common Operational Picture; (e) CD decision and COA Briefs for the Commander and other staff elements; (f) CD inputs into Fragmentation Orders (FRAGOs) as well as Joint Coordination Orders (JCOs).

• **Training:** Because CD issues are enduring in nature, there is a need to institutionalise NATO-wide CD Education and Training (E&T) for all NATO bodies, static and deployable. The requirement has been highlighted and staffed by the ACT in the form of a NATO Cyber Defence Education and Training (E&T) Plan<sup>(7)</sup>, the NATO Cyber Defence Awareness Concept and the NATO Cyber Defence Education and Training Concept.<sup>(8)</sup> Work is underway to unify and synchronise delivery of CD education, training, and exercise. The illustration on the next page from the E&T plan clearly outlines the needs, goals, and overall end-state for NATO CD, with an acknowledgement of increased challenges of CD when deploying. In operations, this usually involves both NATO and non-NATO networks.

**ACCORDING TO THE CD** E&T Plan, CD is recognised as an enduring training requirement that will be required to evolve with the threats, systems, technology, and the rotation of personnel. Achieving a "train as you fight" focus requires a suitable training regime that is both tailored at the individual and collective training

level. To achieve that proper level of focus, the following training principles have been advocated by ACT and put into practice at the JWC:

**Use a building block approach:** Training must be progressive and must use a building block approach. The content of each building block and pre-requisites for joint collective training must be defined – supported by a "thread" that ties all building blocks together and provides broad themes. JWC uses such a "crawl, walk, and run" approach to CD training and aims to progress its training to more sophisticated levels.

**Address multiple levels of expertise:** Cyber defence education is required for all users, but each user does not require the same level of education. The training programmes must recognise the requirements for differentiated levels of training, depending on duty requirements.

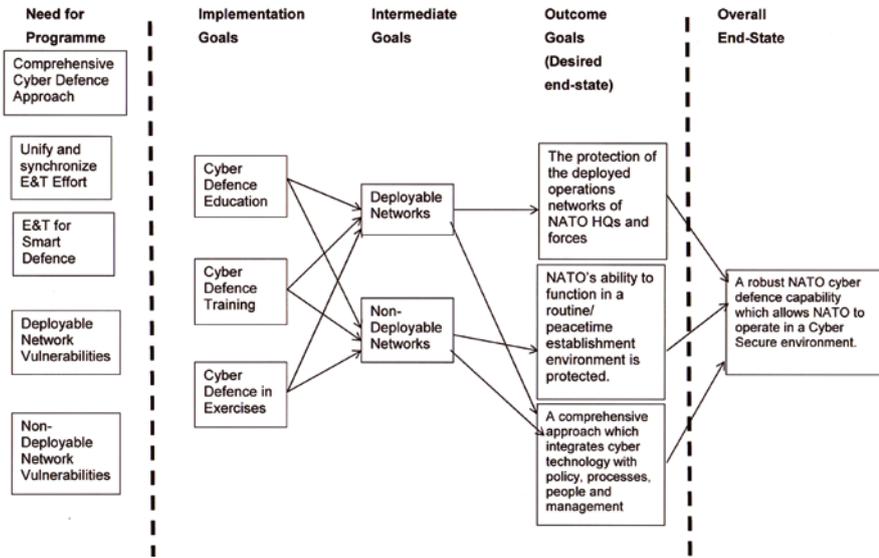
**Use realistic scenarios:** Training will test concepts, procedures, organisational constructs, and skill-sets. The Training Audiences must be exercised within the context of realistic, relevant, and updated scenarios to reflect potential threats.

**Encompass the Chain of Command:** The cyber defence decision-making processes must be tested both up and down the chain. Due to the speed of the cyber incidents, leadership and operators must prepare to execute the necessary actions.

**Be multi-echelon:** Training should be multi-echelon in nature. Conducting collective events where multiple levels are synchronised and interacting with each other within the event is the most effective and efficient use of resources. In JWC training exercises, not only are multiple NATO levels interacting, but the NRF is also trained to interact and coordinate with Host Nation and other external entities.

**Use existing expertise:** The expertise resident in existing NATO civilian and military bodies such as, but not limited to, the NCIRC or ACO for operational knowledge and experience should be utilized where practical and appropriate. Additional ex-





tives supporting SACEUR's Annual Guidance on ETEE (SAGE) and conducted in JWC-directed exercises. JWC is involved in the cyber focus area in the Coalition Warrior Interoperability eXploration, eXperimentation and eXamination eXercise (CWIX).

It may be helpful to also obtain synergies with other venues such as STEADFAST COBALT and CYBER COALITION. Civilian or military training seminars, conferences, table top exercises, or experiments could be leveraged as well. As an example, ACT is leading the Multinational Capability Development Campaign 2013-2014, which includes a Norwegian and Italian-led effort to better integrate cyber into operational planning.

expertise in current and future Cyber Defence issues resides within Nations, selected partners, private sector, and academia. For collective exercises, JWC leverages all available Subject Matter Experts, and in particular, regularly has received support from the Cyber Defence Centre of Excellence (CCD COE) in Tallinn, Estonia, ACO, and ACT.

**Use existing events:** Collective training and exercises will use existing events, both cyber and non-cyber, to the maximum extent possible. A number of such exercises already exist within the Crisis Management Exercise Policy and the Military Training and Exercise Programme (MTEP). Cyber Defence aspects have been in use in NRF training objectives and the exercise objec-

**"One of the early common lessons identified by JWC is the tendency of the Training Audience to mischaracterise cyber defence as a technical issue only."**



The cyber defence team during STEADFAST JAZZ 13. Photograph by JWC PAO.





**Capture lessons:** Every aspect of CD training must be evaluated and adjustments made accordingly. Classroom, exercise, experiments, and certifications will be used to constantly improve CD E&T. A quality assurance approach that enables continuous capability improvement and a feedback loop completes the learning model.

### Unique challenges of deployed operations

One of the early common lessons identified by JWC is the tendency for members of the Training Audience (TA) to mischaracterise CD as a technical issue only. The TA has always appreciated the technical aspects of CD and the inherent role of J6/NCIA to manage NATO deployed and static networks, but not necessarily the NRF operational vulnerabilities to cyber threats. Operational missions require awareness that CD is much broader than NATO networks and NATO exercises have persuaded the JFCs to not only treat CD as an operational issue, but also recognise that cyber incidents can have political, strategic, and economic impact not only for NATO, but its Host Nations and Partners.

**THIS KEY POINT** was clearly highlighted during SFJZ 13 not only by the exercise play, but also by real world cyber-attacks against NATO's Baltic Partners during SFJZ 13. NATO soldiers were deployed in multiple forward locations, with the JTF Headquarters located just outside of Riga. During SFJZ 13, Baltic media and defence officials reported a growing number of cyber-attacks against state administration, defence, and private sector homepages. False messages were posted on the attacked websites saying that the security parameters of the website did not comply with the requirements of the CCD COE. Personnel in the Baltic and Polish defence sectors received fake emails in the name of the CCD COE. The Latvian News Agency reported that a hacker group "Anonymous Ukraine" was behind the cyber-attacks; and partly as a consequence to these events, the Latvian Defence Minister emphasised the importance of Latvia's investment in a cyber defence unit for its Latvian Home Guard.

These real world incidents were relatively small-scale activities that ultimately did

not affect NATO's exercise. Nonetheless, one might imagine the complex challenges for a deployed Commander if faced with large-scale, sophisticated, and well-orchestrated attack. With shorter and faster decision cycles, kinetic and non-kinetic activities and on-going 24-hour operations, information dominance and decision superiority together underpin a successful operation. Understanding and being prepared to operate in cyberspace, including legally and politically, is essential.

### Conclusion

CD in NATO continues to evolve and progress. The very nature of cyberspace is changing warfare. Cyberspace is both virtual and physical and CD is not limited to NATO-owned networks. CD in operations necessitates new ways of thinking, working, and interacting vertically and horizontally, and internally and externally, to manage operational risks. A mission's success may be dependent upon a host of enablers such as national critical infrastructure, transportation systems, banking and commercial networks, telecommunications, media, and internet-based social networks.

At an operational level, ACT and JWC are working together with the JFCs and cyber community of interest to develop both the CD capability and educate, train, integrate, and exercise that capability into realistic and relevant training venues. ✦



### DID YOU KNOW

NATO Cooperative Cyber Defence Centre of Excellence (CCD COE) conducts technical cyber defence exercises, which allows the participants to learn and test the skills needed to fend off a real attack.

The first exercise took place in 2008 as a joint event between Swedish and Estonian universities organised by the Swedish National Defence College and the Estonian Defence Forces. It was followed by the BALTIC CYBER SHIELD in 2010, which was organised together with Swedish National Defence College with support from various Swedish institutions and the Estonian Cyber Defence League.

Since 2012, the exercise series is called LOCKED SHIELDS. The exercise has a game-based approach, which means that no organisation will play their real-life role and the scenario is fictional. The Centre is also contributing to the NATO Cyber Defence Exercise (CYBER COALITION) since 2009 by helping to plan, develop, and execute the exercise.

Read more at [www.ccdcoe.org](http://www.ccdcoe.org)

### END NOTES:

- (1) AJP 3.10, Allied Joint Doctrine for Information Operations, 23 November 2009 (which is currently under review).
- (2) JFC Naples, for example, continues to develop a JTF HQ SOP 218 for Cyber Defence, which will likely serve to identify pre-doctrinal processes and standard working methods before doctrine is in place.
- (3) See ACT's report on Cyber Defence Taxonomy and Definitions dated 15 July 2013.
- (4) NATO Computer and Information Agency.
- (5) NATO Computer Incident Response Capability.
- (6) NCIA, NCIRC, JLSG, J4, Component Commands, and representatives from the other boards such as the Information Operations Coordination Board, Joint Defended Assets Working Group, Daily Assets Reconnaissance Board, and Force Protection Working Groups.
- (7) NATO's Cyber Defence Education and Training Plan, updated and forwarded to NATO HQ, 4 December 2013.
- (8) These updated concepts were forwarded by ACT to NATO's Emerging Security Challenges Division, 22 October 2013; their aims are to provide a framework for detailed analysis of the requirements, and analysis of the existing CD training opportunities.

# 7 STEPPING STONES FOR TRIDENT EXERCISES

## CYBER DEFENCE TRANSFORMATION

By Lieutenant Colonel H. Todd Waller, United States Air Force; Lieutenant Colonel Joel Gourio, French Air Force  
Joint Effects Section  
Joint Warfare Centre

**THE JOINT WARFARE** Centre is preparing to conduct a new series of operational level exercises, beginning with TRIDENT JAGUAR this spring and reaching a climax with the high-visibility exercise TRIDENT JUNCTURE 15 in support of NATO's Connected Forces Initiative.

Given the importance of cyber defence (CD) to the Alliance, an appreciation of the cyber lessons of STEADFAST (the predecessor to TRIDENT) is essential for achieving a higher level of CD across Alliance operations. This article captures the seven most significant findings (which we will call "stepping stones") of the last four STEADFAST exercises in which CD was introduced and played prominently.

**(1) CD is much more than a technical issue:** Operational Battle Staff Training Audiences readily appreciated the technical



aspects of CD and the inherent role of the J6 and NATO Communications and Information Agency (NCIA) to manage NATO deployed and static networks. Not so intuitive was the fact that NATO Response Force (NRF) operational vulnerabilities to cyber threats could extend beyond NATO networks. The cyber-contested environments created for STEADFAST exercises enabled the Joint Force Commands (JFCs) to see CD more operationally. In fact, both JFC Brunssum and JFC Naples adopted a differ-

ent approach after experiencing cyber injects during STEADFAST exercises and subsequently treated CD as an information assurance and mission assurance issue with special emphasis on the management of risks to the operation and the overall mission. More specifically, both JFCs initially struggled to manage CD injects within J6 and they eventually adopted a J3-led approach. J3 leadership was more successful in characterising the threat operationally; marshalling full Battle Staff support to include in-demand specialities such as LEGAD, STRATCOM, POLAD; and in supporting the Commander's decision-making via actionable products.

**Recommendation:** Continue J3-led CD with a mission assurance emphasis and with full support from the Battle Staff. J6 should continue its focus on information assur-





ance. Incorporate operational CD findings into strategic documents. For example, a more comprehensive taxonomy is required than the current MC 0571 definition of CD, which is "the application of security measures to protect CIS infrastructure components against a cyber-attack."

**(2) Operational level cyber defence is emerging and needs nurturing:**

CD direction and guidance across NATO exists at the strategic level, but the operational level guidance is limited. Consequently, the JWC approach to CD has been to create realistic cyber threats and incidents without being overly prescriptive in how HQs should respond. This has allowed the Joint Task Force and component command HQs to leverage the intellectual capital of their staffs to work through the problem and generate innovative solutions. Accordingly, JFC Naples produced Standard Operating Procedure 218/Cyber Defence, which was approved by SHAPE in August 2013, and was further adapted by JFC Brunssum for use in STEADFAST JAZZ 13 (SFJZ 13).

**Recommendation:** Establish a Bi-SC Working Group to nurture a common CD understanding and include all CD stakeholders across the Alliance. Ensure Allied Command Transformation and Allied Command Operations (ACO) appreciate the CD findings obtained during SFJZ 13 and incorporate them into strategic CD documents. ACO and its subordinate commands should continue to refine SOP 218. The JFCs should integrate CD into daily battle rhythms and continue to mature their CD concepts in and out of exercises with consideration of cyber threat impacts to static HQ operations. The NATO Standardization Agency should consider inclu-

sion of CD into the appropriate Allied Joint Doctrines, with caution not to rush doctrine development, recognising the value of allowing the JFCs to wrestle with the CD challenge in the absence of an overly prescriptive guidance. TRIDENT provides an ideal laboratory for NATO Battle Staffs to explore Joint Task Force-level CD solutions.

**(3) Cyber defence SMEs are the key to A+ performance:**

The quality of CD play in exercises depends on the quality of the exercise script and Subject Matter Expert (SME) support during exercise planning and execution. The pool of CD SMEs within NATO is limited, however, operational CD expertise is emerging in the JFCs with STEADFAST as a catalyst. The Cooperative Cyber Defence Centre of Excellence (CCD COE) and the NATO Computer Incident Response Capability (NCIRC) are also sources of CD expertise, but their support is subject to competing requirements. TRIDENT JUNCTURE's ability to provide an effective means to test and refine CD expertise in a simulated operational environment to include tactical, operational, strategic CD reporting mechanisms makes it a valuable CD venue for all NATO CD stakeholders.



**Recommendation:** Establish TRIDENT as a priority with support from key CD stakeholders. Use TRIDENT to rehearse and refine CD reporting mechanisms. The JFCs should provide SME support for each other's certification exercises, enabling each command to gain value from every NRF certification exercise. Establish and implement NATO training to increase the pool of CD SMEs. Leverage CCD COE expertise to develop a corporate knowledge base for operational CD.

**(4) WANTED! Comprehensive cyber defence education and training:**

A number of NATO entities such as the NATO School Oberammergau, the CCD COE, and the Centre of Excellence for the Defence Against Terrorism offer courses that address the technical and legal aspects of CD and cyber terrorism, but there are no courses that survey NATO CD policy, strategic guidance, and organisation which puts it into an operational context. There are no courses that introduce cyber incidents in a comprehensive way that include information and mission assurance considerations.



**Recommendation:** Establish CD Education and Training in NATO that addresses operational and technical aspects. Incorporate NATO CD policy, strategic and operational level documents and CD organisation into training curriculums. Incorporate CD into existing training venues (i.e. Operational Planning Course at NATO School). Encourage broad NATO Command Structure (NCS) and NATO Force Structure (NFS) participation to include CIS and non-CIS professionals.

**(5) Empower cyber defence during Crisis Response Planning (CRP):**

As a discipline across the Alliance, CD is still emerging and this is most evident during the planning phase of an operation. The JFCs made progress by defining planning activities and products in SOP 218, but planning efforts to date are immature. Crisis planning activities are by nature high-pressure events with short timelines and many required products. This environment can be at odds with the creative and innovative thinking necessary to develop the most resilient plans for cyber-contested battlefields. A number



of limiting factors were identified during CRP events to include: (1) a limited understanding of CD operational relevance; (2) a lack of confidence in producing cyber threat analysis; (3) a lack of understanding of available CD resources (*i.e.* Rapid Reaction Teams, contract support, national support); and (4) a limited understanding of strategic/political-level cyber sensitivities and how these could influence mission accomplishment.



**Recommendation:** Update the Comprehensive Operations Planning Directive to include CD. Fill the CD training void. Conduct CD planning during day-to-day JFC activities. Continue to mature planning products and processes (*e.g.* Cyber Prioritised Asset List and Cyber Risk Assessment Matrix generation). Establish coordination between JFCs, component commands, and NFS elements. The NATO Intelligence Fusion Centre should provide cyber threat analysis support to NCS and NFS and train intelligence personnel how to conduct such analyses. Encourage Operational Liaison Reconnaissance Teams (OLRT) to make CD a priority during TRIDENT. Assign CD staff during CRP that have the capacity to think creatively and to teach/coach the planning staff to do likewise.

**(6) Create a playbook for all cyber defence-related exercises:** Coordination and information sharing between the various NATO cyber defence-related exercises (TRIDENT, CYBER COALITION, STEADFAST COBALT, CWIX, CMX, etc.) have been limited. Unity of effort could enhance the consistency and efficiency of CD-related exercise planning and execution activities across the Alliance.



**Recommendation:** Establish Bi-SC CD Working Group to synergise CD activities, facilitate information sharing, and develop common objectives. Standardise CD play in NATO exercises to the extent that supports those common objectives. Develop a repository of CD Lessons Learned for use across the Alliance. A repository of MEL/MIL products would be useful for exercise planning staffs.

**(7) Achieve more realistic CD training without excessive risk:** CIS is provided to support exercises without being part of the "tested" Training Audience. CD injects are scripted/simulated and do not involve the introduction of malicious software that could be used to test real exercise networks.

As a result, the "train as you fight" approach is not fully implemented, however, employing real exercise cyber attacks could degrade the exercise network to the detriment of meeting all exercise Training Objectives.

**Recommendation:** Limit CD in TRIDENT to simulated incidents until ACO's implementation of CD is more mature. Use other exercises, such as CYBER COALITION, CWIX and STEADFAST COBALT, to conduct testing of computer networks. Explore the costs and benefits of linking such exercises (perhaps as part of the Connected Forces Initiative) in order to better replicate the "train as you fight" concept without incurring excessive risk to the TRIDENT exercise network. ✦



**"Use TRIDENT to rehearse and refine cyber defence reporting mechanisms." CJOC TRJR 14, Menorca, Spain. Photograph by JWC PAO.**

# A CALL FOR NATO TO OPERATIONALIZE CYBERSPACE

By Lieutenant Colonel Florian De Castro, United States Air Force  
Chief Nuclear Operations and Cyber Defence Cell  
HQ Allied Joint Force Command Naples (JFC NP)

*Due to the lack of a common definition or taxonomy, the terms internet, world-wide web, cyber and cyberspace will be used interchangeably throughout this article.*

**I**T HAS ALWAYS BEEN assumed that the internet or cyberspace domain is considered without borders, and for a relatively brief period in the early 1990s, it was. But by 1996, the raw, unfiltered internet that most people think of now has started disappearing. The same technology that allows for global interconnection has created the cyberspace borders and boundaries that most people do not know already exist. These are the same borders and boundaries that national governments, and by extension the military, need to further develop in order to accomplish their defensive missions. To truly accomplish cyber defence, NATO will need to *operationalize* the newest domain of cyberspace as was done with the other four domains of land, maritime, air, and space.

**THERE WAS A** time in human history, about twenty thousand years ago, that the land and maritime domains were seen as vast and borderless as cyberspace is seen

now. In the past, people were able to move freely from one land or maritime area to another similar to how we can move from one website to another. Over the years, we sub-divided continents under different names such as the Americas, Eurasia, and Africa but these are all the same landmass *i.e.* they are all one land that is part of the Earth's crust. The same can be said for the oceans since they are all the same body of water. In military terms, we operationalized and sub-divided the different domains since it allows us to manage these vast areas more easily. The two newest domains started this process about one hundred years ago for air, and fifty years ago for space. The operational development of the air and space domains was patterned after the land and maritime. In order to further develop the cyberspace domain we will have to draw suitable analogies from the other domains.

For the land domain, the development of cities and roads led to national borders and in military context, armed checkpoints to defend those borders. In the maritime domain, the concept of territorial waters was institutionalised. From the 17th to 18th centuries, territorial waters were roughly three nautical miles (5.6 km) wide. For some European countries

this distance coincides with the maximum range a cannon shot could be fired and the area that a nation can protect from shore<sup>(1)</sup>. As technology and commercial interests advanced, the concept of territorial waters were legally defined and led to 12 nautical miles (22 km) as the suitable internationally accepted limit<sup>(2)</sup>.

The same can be said for air with the development of air routes, air corridors and air defence identification zones (ADIZ). In the early days of the air domain, a pilot could fly anywhere. The development of radar, fighter interceptors and surface to air missile (SAM) combined to produce an integrated air defence that quickly restricted unauthorised flights at less than 70,000 feet (21.3 km). It took the 1960s shoot-down of a U-2 to acknowledge that the idea of an Open Sky now has limitations and nations can and will protect their sovereign airspace<sup>(3)</sup>.

**WHILE IT CAN BE** argued that space is vaster than cyberspace, space is not without its own limits and boundaries. We have subdivided space around the Earth into three orbital regimes of Low Earth Orbit (LEO), Medium Earth Orbit (MEO) and Geostationary Earth Orbit (GEO)<sup>(4)</sup>. Each orbital regime has their particular military advan-

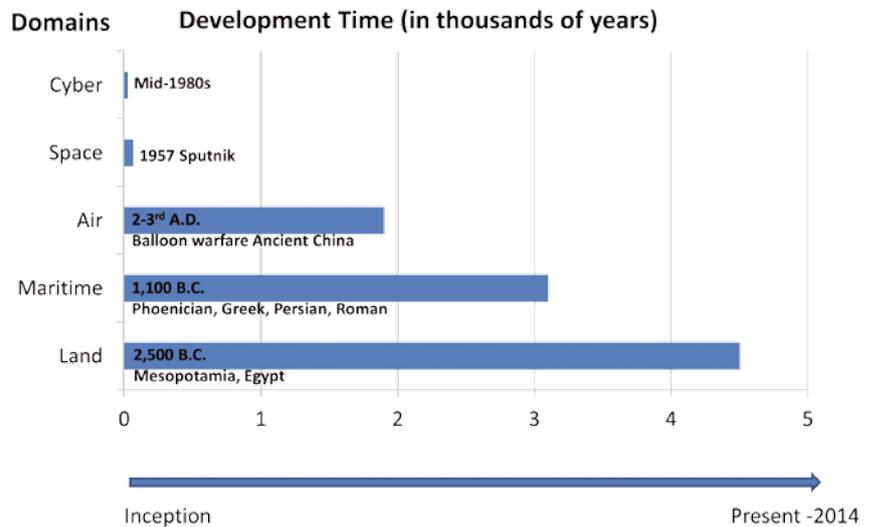


tages and disadvantages similar to other domains. In the last twenty years, space has become as congested, contested, and competitive as the other domains<sup>(5)</sup>. This congestion and competitiveness can be seen in the GEO orbit due to the limited number of available orbital slots. The commercial value of these orbital slots eventually led to development of international laws advocating for using space for the benefit of all. Yet, despite international consensus of peaceful uses of space, it has not prevented nations from developing offensive and defensive military capabilities similar to those seen in the other domains<sup>(6)</sup>. Figure 1A depicts the time it took for each domain to evolve and mature, while Figure 1B how quickly cyber has evolved compared to the air domain.

**IN ORDER FOR NATO** to re-adjust its perspective, the Alliance will need to consider cyberspace as it does the other domains. There are three intertwined developmental concepts that must be addressed with regards to cyber. These are situational awareness; legal-international consensus on cyber taxonomy, rule of law and warfare; and the means of enforcement. These concepts are not fully developed for cyberspace and it is through these concepts that we developed practical military perspective and utilisation for the other domains.

In all domains, the military cannot engage an adversary that it cannot detect. In fact, the issue of attribution is one of the major challenges of cyberspace. From a technical point of view, attribution would require in-depth knowledge of gateways, internet protocol, store logs and traceback queries,

### 1A. DOMAIN EVOLUTION OF WARFARE



input debugging, matching streams via headers, content, and/or timing as well as employing reverse flow and performing network ingress filtering<sup>(7)</sup>. Most of these terms are probably foreign and may as well be another language. So the easiest way to operationalize or translate is via an analogy to the other domains, specifically the air domain. Attribution is difficult because of the lack of situational awareness.

What cyberspace needs is the air domain's equivalent to radar and an air defence concept. However, the radar equivalent for cyber has yet to be fully developed and matured. The technology exists for cyber just as it was for the radar in the 1940s,

but the technology and air defence concept still took time to organise, conceptualise. It took time to construct a detection network with sufficient sensors, communication sites, ground visual observers, and fighter interceptor bases. One could argue that cyber attribution is so difficult since one would have to trace back the activity through multiple countries. That the concept of "radar" in cyberspace cannot be used since it would mean going into other countries' potentially sovereign areas. But how is that different from current radar technology and concepts? Radar does not end at the geographic or political borders; in fact, one can detect radar emissions from neighboring countries in all domains. In other words, radar does not stop at the borders, so should cyber's "radar" need to stop at the cyber borders? Cyber's "radar" would allow the tracking of the adversary to its source emitters that may have been routed through several countries' internet service providers (ISP) and gateways. To increase situational awareness, cyber would require the equivalent to an aircraft's identify-friend or foe (IFF) transponder. Of course, this would require some update to how internet protocol (IP) data packets are addressed and routed.

Figure 2A shows the current composition of IP data as it goes through the internet<sup>(8)</sup>. Why not add an additional source



**"What cyberspace needs is the air domain's equivalent to radar and an air defence concept."**





## 1B. EVOLUTION OF CYBER WARFARE (Paralleled militarisation of other domains)

| Date      | Cyber Event  | Comparison (air domain)                                     |
|-----------|--|---|
| 2000-2003 | Titan Rain – State sponsored, Advanced Persistent Threats (APT)  | Intel, reconnaissance, observation                          |
| 2007      | Estonia – Use of proxy/non-state actors, Distributed Denial of Service (DDoS)                                      | Disrupt, degrade C2, interdiction, info/psyops              |
| 2008      | Georgia/South Ossetia War – First use of Cyber prior to/in-parallel to military operations                         | Combined military operations with other domains             |
| 2010      | Stuxnet – First use of surgically precise cyber attacks affecting physical environment and critical infrastructure | Equivalent to precision guided munitions                    |
| 2014      | Ukraine – Second use of Cyber in combined military operations  | Operationalization of Cyber with the other military domains |

location tag, to the IP data thus allowing for increased situational awareness as shown in Figure 2B? To accomplish this would require legal and international cooperation and consensus with regards to cyberspace.

For the second area, legal-international consensus on cyber taxonomy, rule of law and warfare, there must be a common framework for definitions and understanding regarding cyberspace. What are the terms of references? How is legal warfare defined for cyberspace? What is considered an act of war? Each of the other domains has these common frameworks defined. Air and space derived their legal and international principles largely from their predecessors, land and maritime, which cyberspace can

also do. These national and international laws developed as each domain matured and commerce increased. The problem with cyber is that while the other domains have had time to develop, the use of cyber as part of a military operation do not have the same luxury of time. NATO could pioneer the international operationalization and normalisation of cyber so that it is treated similar to the other domains. One example of international normalisation can be seen in the commercial entertainment industry, television and movies. Most are familiar with the different regions with regards to DVDs such as Region I for the USA and Region II for Europe, Region III for Asia and so forth. With the internet or cyberspace, in theory,

one can stream digital movies and media anywhere there is an internet connection, but this is not the case. The commercial entertainment industry has established electronic borders and has applied the same digital rights management to its property on the internet as it has with its physical products. Most media services coded as Region I cannot be accessed from certain Region II European IP points and some streaming media are not available at all. Yes, there are ways to go around these restrictions, but for the most part, the commercial entertainment industry has been able to enforce its restrictions in cyberspace. The taxonomy for the commercial entertainment industry is the same regardless of whether it is in the physical or cyberspace domain. In fact, even the prices are the same.

**FOR THE LAST CONCEPT**, means of enforcement, the old saying, "the best defence is a good offense" or at least "active defence" describes every military domain to include cyber. Soldiers cannot accomplish their missions wearing just body armour. Soldiers require weapons to accomplish their stated military objectives. Even Ballistic Missile Defence utilises an offensive system for defence<sup>(9)</sup>. All military strategies and strategists from Machiavelli to Clausewitz describe this dual need. In Chinese philosophy, one cannot have a Yin without a Yang. NATO has established a capable defence for most cyber threats, but that is just the first step and what needs to quickly follow is the development of "active defence" capabilities. NATO must realise that the offensive capability of cyber surpasses any defensive capability that can be implement-

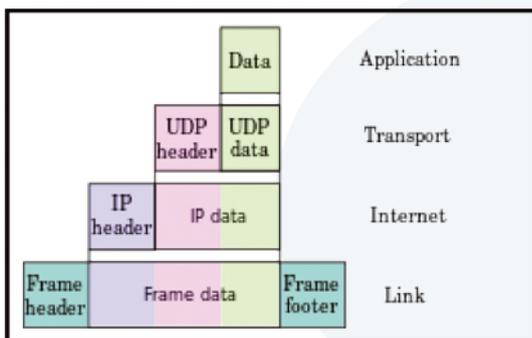


Figure 2A: Sample encapsulation of application data from UDP to a Link protocol frame

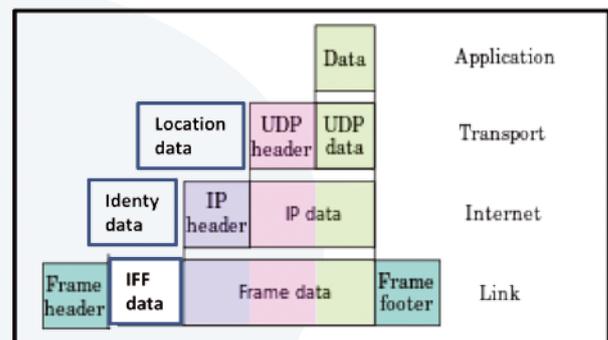


Figure 2B: Cyber IFF example



ed. The area that needs to be defended is so vast that it does not matter how "resilient" the cyber network is. NATO will not be able to "deter" the most determined adversaries without an offensive capability. The military analogy is that NATO has built the equivalent of a Cyber Maginot Line against a Cyber Blitzkrieg. One should not infer that the Maginot Line is not needed, but that the Blitzkrieg is equally needed. We must not forget that although NATO is a defensive Alliance, the Alliance possesses equal measure of defensive and offensive capabilities.

**"THE SUPREME ART** of war is to subdue the enemy without fighting"... Sun Tzu's quote describes the potential future of cyber as a war-fighting domain. While NATO has planted the seed for this potential future, the Alliance must continue the *operationalization* of cyberspace to co-equal the other domains by addressing the three developmental concepts of situational awareness; legal-international consensus on taxonomy, rule of law and warfare; and the means of enforcement. Only then can NATO develop the proper military perspective and utilization for cyberspace. ✦

**END NOTES:**

- (1) While the three nautical mile/cannon-shot rule applied more for the Mediterranean countries and Holland versus the Scandinavian countries, it served as a suitable accepted compromise between the different countries at the time.
- (2) Law of the Sea — how 12 nautical mile became the accepted definition for a nation's territorial waters.
- (3) On May 1, 1960, CIA pilot Francis Gary Powers was shot down over the USSR.
- (4) LEO is considered up to 2,000 km, MEO from 2,000 km up to 35,786 km and GEO is at 35,786 km.
- (5) Space is now congested due to man-made waste left behind as satellites are launched or the growing number of inactive satellites.
- (6) The 2007 Chinese anti-satellite (ASAT) test is the latest example of the further militarisation of space.
- (7) Techniques for Cyber Attack Attribution.
- (8) [http://en.wikipedia.org/wiki/Internet\\_Protocol](http://en.wikipedia.org/wiki/Internet_Protocol)
- (9) The original design for the Patriot System is as a Surface to Air Missile (SAM) system. A defensive weapon used to offensively strike at approaching enemy aircraft.

# Norway co-leading the multinational project on cyber defence and operational planning

By Siw Tynes Johnsen  
 Norwegian Defence  
 Research Establishment (FFI)

**MODERN SOCIETIES ARE GROWING INCREASINGLY** dependent on cyberspace, and modern armed forces are no exception. Cyberspace influences operational activity in all of the warfighting domains. Despite this, there is still a gap in the knowledge of those aspects of the cyber domain with an impact on operational planning and execution. In its aim to fill this gap, Norway has taken on the leadership role of a multinational project team seeking to integrate cyber defence into joint operational planning. NATO's Joint Warfare Centre (JWC) is a highly valued partner in this project, and has provided a crucial multinational perspective.

**Multinational Capability Development Campaign**

This particular project is part of the Multinational Capability Development Campaign (MCDC) 2013-2014, and the Norwegian project team consists of personnel from the Norwegian Defence Research Establishment (FFI) who are using FFI's technological and analytical competencies. MCDC is a continuation of the Concept Development and Experimentation (CD&E) campaign, formerly known as the Multinational Experiment (MNE) series. MNE-7, which was the final campaign in the MNE series, dealt with securing freedom of action in the global commons and identifying their interrelationships. The MCDC 2013-2014 campaign is the next logical step and focuses on combined *operational access*. Operational access is defined by the United States' Joint Op-



erational Access Concept (JOAC) as *"the ability to project military force into an operational area with sufficient freedom of action to accomplish the mission."* The JOAC states that the emergence of the cyber domain as an increasingly contested domain makes joint and combined operations more complicated, and potentially increases the vulnerability of a joint force in need of access.

The cyber efforts within MCDC are co-led by Norway and Italy, and the two countries are separately responsible for one out of two strands of Concept Development and Experimentation. The part of the project led by Italy focuses on challenges related to data analysis in the cyber domain and open source intelligence. Through extended discussions with national and international partners ahead of the project's starting date, it became evident that there were still issues remaining in terms of integrating the cyber domain into the joint Operational Planning Processes. A majority of the MCDC participants use NATO's Comprehensive Operational Planning Directive (COPD) when planning joint and combined operations, which makes MCDC an ideal forum where one can find solutions for this process. Other planning processes follow similar steps, which would make it easier for nations to adapt the product to fit national needs.

### Operational Planning Products

The aim of this project is to develop two supporting documents, which would support the multinational planning processes such as the COPD, and to inform the planning coordinators of issues related to the cyber domain. These documents seek to increase cyber situational awareness and better inform a combined joint force of the cyber aspects of the operational environment. The first document is the guidelines for cyber integration throughout the COPD planning, Phases 1–4b. It is a document intended to serve as a step-by-step guide for the planning coordinator, pointing to where and how specific cyber aspects should be considered. What is perhaps especially crucial is to address the cyber elements as early as in Phase 1, which focuses on achieving situational awareness. The goal for this document is to be concise in order to make it useful for a planning coordinator who is working towards tight deadlines. The proj-

ect also aims to produce a handbook where contexts and circumstances in the cyber domain, focusing specifically on situational awareness and operations, are defined, discussed, and analysed. This handbook could serve as an educational tool for stakeholders and parties with an interest in joint operations and cyberspace, and would provide more comprehensive information to military professionals with a keen interest in exploring the cyber domain.

### Process

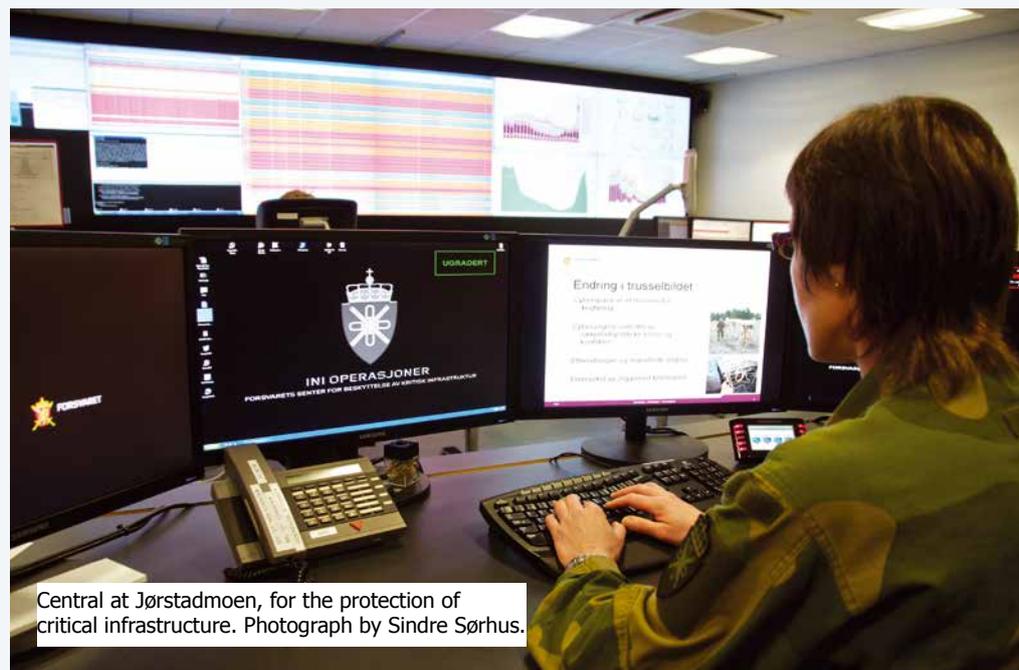
The Concept Development Process has been led by the Norwegian Defence Research Establishment, on the one hand, and MCDC Partner Nations and organisations participating actively, on the other. In turn, partners also host multinational workshops that allow the participants to get together to discuss and share their knowledge.

The first workshop of this kind took place at the European Defence Agency in Brussels, Belgium, in October 2013. The focus was on networking and conceptual discussions with the aim to identify the guideline's contents as well as that of the handbook. The second workshop was held in Bern, Switzerland, in December 2013. This time the group brought a more hands-on, detailed approach to the table, as the Norwegian team had provided a rough,

first draft of the guidelines and handbook to the participants to consider and comment on. The third and final workshop, before stepping into the experimentation phase, focused on editing the final version of the guidelines and handbook. This workshop was hosted by the Norwegian Armed Forces Cyber Defence at the Jørstadmoen Camp, right outside the town of Lillehammer, in March 2014. In September, during the experimentation phase, the multinational group will travel to Spain, where the operational planning coordinators will test and evaluate the products developed. The crucial feedback gained from this phase will help make the products as useful and appropriate as possible for use in real operational planning processes. The project sign-off will be marked by an integration workshop in Austria in October 2014, where the lessons learned from the experiment will be added to both the guidelines and the handbook.

### Contact information

Are you interested in learning more about the Norwegian Defence Research Establishment's work in the area of cyberspace and operational planning? Don't hesitate to contact the project leads: Siw Tynes Johnsen ([siw-tynes.johnsen@ffi.no](mailto:siw-tynes.johnsen@ffi.no)) and Ragnhild Siedler ([ragnhild.siedler@ffi.no](mailto:ragnhild.siedler@ffi.no)).



<SPOTLIGHT>  
**EXERCISES**



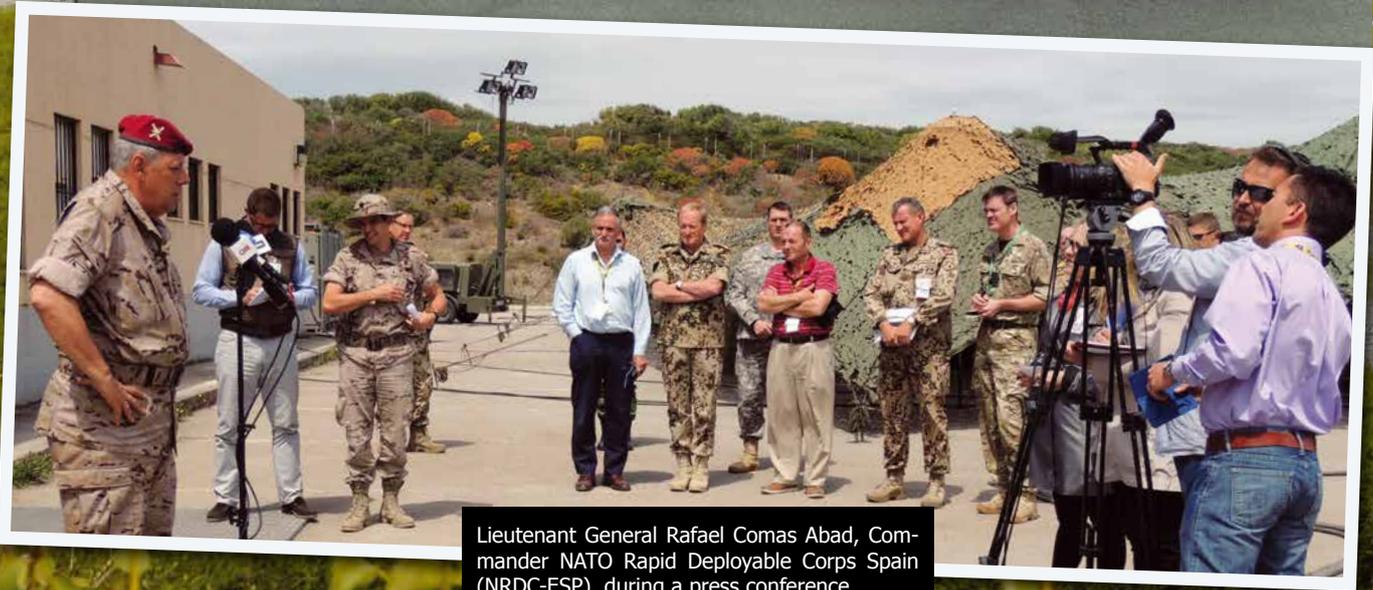
Major General Erhard Buehler, welcoming distinguished visitors to observe the exercise in Menorca, Spain.



Vice Admiral Philip S. Davidson, Commander STRIKFORNATO, during a press conference.



TRJR 14 EXCON at JWC, Stavanger, Norway.



Lieutenant General Rafael Comas Abad, Commander NATO Rapid Deployable Corps Spain (NRDC-ESP), during a press conference.



The three OPRs: JWC OPR (Lt. Col. Bo Andersen, DNK A), NRDC-ESP Co-OPR (Lt. Col. Robert Kroning, USA A) and SFN OPR (Cdr William Clarke Brown, GBR N).



TRJR 14 EXCON meeting in Menorca, Spain.



# TRIDENT JAGUAR 14 On FOCUS

Continued on page 60.



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WATCH THE VIDEO  
ABOUT TRJR 14. GO  
TO YOUTUBE.COM/  
USER/JWCNATO.

**TOP LEFT: Exercise TRIDENT JAGUAR 14, DV Day, 10 May** — Major General Erhard Buehler, Commander JWC and TRIDENT JAGUAR 14 Exercise Director, welcomed distinguished visitors, including military flag and general officers, civilian officials and media representatives to observe the ongoing exercise with NRDC-ESP at the San Isidro military base on the island of Menorca, Spain. During his presentation, Major General Buehler said: "One major difference in this exercise compared to those in the past, is the exercise architecture. The demands of two separate Joint Task Force HQs have to be fulfilled by one Exercise Control Team."

The exercise will be covered extensively in the upcoming edition of The Three Swords. Photographs by JWC PAO.

## NATO Energy Security Centre of Excellence

<http://www.enseccoe.org>

"NATO ENSEC COE assists NATO, Nations, Partners and other bodies by supporting NATO's capability development process, mission effectiveness and interoperability by providing comprehensive and timely expertise on aspects of energy security."



**E**NERGY IS LIKE OXYGEN — most people only care about it when they are deprived of it. More efficient energy use in the military brings advantages other than reducing costs. By cutting the energy use we can save lives and environments. There are three very valid reasons why we should devote greater attention to energy security needs:

- **Vulnerability of energy supplies:** In some parts of the world piracy poses a permanent risk to oil and Liquefied Natural Gas (LNG) tankers; cyber-attacks against energy infrastructure have happened on numerous occasions, and hundreds of terrorist attacks against energy infrastructure occur daily.

- **Growing energy demand of armed forces:** NATO's forces are consuming more and more fuel every day. In World War II, the average fuel consumption per soldier was less than two gallons a day, while today it has jumped more than tenfold. The rising price of fuel also creates a greater need for more efficient energy use.

- **Global resource landscape:** Over the next 20 years, the global energy demand is estimated to increase 30 percent. Even more tankers will carry oil and LNG over even greater distances and through narrow choke points. As a result, more disputes about territories with a vast supply of valuable energy resources may arise.

**THESE SERIOUS**, growing needs within the security community identified a need to establish a NATO Energy Security Centre of Excellence (ENSEC COE). Created on 10 July, and accredited on 12 October 2012, the NATO Energy Security Centre of Excellence currently operates as a widely recognised international military organisation. Lithuania, which is the Centre's framework nation, Estonia, France, Italy and Turkey are working closely together to help transform scientific process and research while at the same time contributing to training activities and the exercise planning process. And, the Centre is already expanding — Georgia and

the United Kingdom have expressed their interest in joining the COE; the UK will join as a Sponsoring Nation and Georgia as a Contributing Partner.

### Value for NATO

NATO ENSEC COE adds value to the NATO agenda through its many activities, such as:

- 1 **Support to exercises and training events.** In 2013, ENSEC COE took part in the preparation phase of the exercise STEADFAST JAZZ 13 (SFJZ 13) and supported the development of the SKOLKAN scenario. In addition, Exercise BALTIC HOST 13 was connected to the SFJZ 13 with scenario which aimed to work on Host Nation Support procedures within the three Baltic States (Lithuania, Latvia and Estonia). As a result, almost all preparatory events were executed at the JWC. This year, ENSEC COE is planning to participate to the preparation phase of the Command Post Exercise TRIDENT JUNCTURE 14, Crisis Management Exercise (CMX) VIGILANT GUARD 14, NATO Crisis Management and Table Top Exercise (TTX) BALTIC HOST 14, all of which focus on Critical Energy Infrastructure Protection (CEIP) from cyber-attacks. Since JWC will serve as the base for the preparation of the TTX, the ENSEC COE is planning a series of working visits to the JWC.



**AS FOR 2015**, JWC came up with the initiative to organise and host a Warfighting Conference in an effort to support ENSEC COE Concept and Doctrine development in 2015. Therefore, it goes without saying that ENSEC COE is very much in favour of this event and does what it can to help with the preparations. NATO Civil Emergency Planning Committee has also requested NATO ENSEC COE to support a TTX on NATO Critical Energy Protection, which will take place in Vilnius, Lithuania, from 27 to 31 October 2014. The TTX will support national authorities in building resilience by improving disaster preparedness, planning, prevention and response, and strengthening their capability to manage potential civil emergencies. The event will cover topics related to the implementation of the NATO Policy on "Energy Related Critical Infrastructure Protection".

**2 The multi-year project "Energy Management in an Expeditionary Environment: Towards Smart Energy Camp"**. This project is designed to provide a model for an energy-efficient battalion-sized military unit as well as multi-faceted, integrated and feasible solutions, which again will increase energy efficiency of military units, both in fixed locations and during deployed operations. This is achieved by proposing innovative technology solutions for management and increasing combat capabilities, where possible.

**3 Special Study "Energy Efficiency: Cultural Change"**. The aim of this study is to examine the existing relevant culture; perceptions and which behavioural schemes are resistant and which schemes promote energy efficiency within military entities. The results of the study are expected to indicate strengths and weaknesses of the enabling cultural environment as well as opportunities and risks of the predisposing cultural environment. Later, the results will be implemented into the preparation of tailor-made education and training courses, exercises, as well as the development of common standards, common language and common procedures, thereby ensuring better use of energy-efficiency related technology and logistics.



**4 Conference and industry exhibition "Innovative Energy Solutions for Military Application 2014" (IESMA 2014)**. The purpose of this event is to bring the military, academia and industry professionals together from NATO and Partner Nations to share their experiences and discuss the need for improving energy and environmental technologies in order to raise the visibility of those projects and products, which are suitable for military application. This is the second time (the first time being in 2011) ENSEC COE organizes IESMA.

**5 Support to production and outline of NATO policy paper "Power Generation for Deployable Force Infrastructure" (joint project with NATO Military Engineering Centre of Excellence)**. This document sets out the principles and guidance on how to improve energy generation efficiency and reduce the logistical burden of Deployed Force Infrastructure. It also sets out a framework for the development of standards and addresses areas relating to energy consumption, storage and distribution for the purpose of enhancing the overall cost effectiveness.

**6 Further support to enhancement of military energy efficiency** in NATO through further performance of co-directorship and executive management of Smart Energy Team (SENT) project as well as support to other NATO smart energy initiatives. SENT is an interdisciplinary team of experts that will generate cross-cutting knowledge and steer the process of integrating "smart energy" into Smart Defence. SENT serves to link activities and expertise related to smart energy and facilitate further Research and Development.

**7 Publications on "Energy Security: Operational Highlights" and "Energy Security Forum"**. Various energy security experts analyse relevant energy security events and tendencies and share their observations in a collection of articles in various monthly publications.

**8 Cyber defence of critical energy infrastructure**. The Centre is rolling out a work-stream for analysing cyber threats and vulnerabilities of critical electrical grid infrastructure control as well as communication systems on a regional (cross-border) level and possible physical and digital consequences of such attacks. This project is intended to be a joint project involving both Cooperative Cyber Defence Centre of Excellence (CCD COE) and Defence Against Terrorism Centre of Excellence (DAT COE).

**THESE ACTIVITIES** help to properly address energy security within the Alliance by shifting from purely political statements to a more practical implementation, utilising a wide range of tools and formats. ✦

### The Centre's ambitions

- to play the leading role in introducing activities related to energy security within NATO;
- to conduct one NATO recognised course annually;
- to attract one NATO Nation per year as a sponsor.



## NATO Command and Control (C2)

### Centre of Excellence

<http://c2coe.org/>

"The C2 COE provides expertise in Command and Control to several developing NATO initiatives including reduced HQ structure, deployable HQ concept/Joint Task Force HQ, maritime security, Smart Defence and the Connected Forces Initiative. "



**T**HE COMMAND AND CONTROL Centre of Excellence (C2 COE), located in Kromhout Kazerne in Utrecht, the Netherlands, was established in 2007 and accredited as a NATO COE in 2008. The Centre is sponsored by nine NATO Nations and has a total of 25 posts organised into a Directorate and four Branches: Operational Assessment Branch, Analysis and Concepts Branch, Expertise Management Branch and Support Branch. The Centre's Director is Royal Netherlands Navy Captain G.H. (Gerrit) Nijenhuis. He assumed his post in February 2014.

The C2 COE's mission is to support NATO, Nations and international institutions/organisations by providing Subject Matter Expertise on all aspects of the Com-

mand and Control (C2) process with a focus on the operational environment. The C2 COE continually reflects on our position within NATO to ensure we are providing the Alliance with the most relevant contributions in the field of C2. We find ourselves in a fast-paced and dynamic environment with new focus areas and challenges. Thus, the Centre constantly strives to improve C2 principles and techniques. We contemplate if we would be better suited to specialise in a specific C2 domain or if we could better serve the Alliance by championing new initiatives within the field of C2. The Centre is currently analysing three distinct elements of C2: human factors, Information Knowledge Management (IKM)/staff processes, and policy and doctrine. We will evaluate if these elements meet our expectations as well as the needs of our customers in the C2 domain.

The C2 COE has spearheaded several Allied Command Transformation (ACT) initiatives to include the NATO Network Enabled Capabilities (NNEC) assessment of the NATO HQ structure. Last year the Centre focused on further development of the new NNEC criteria and ways we could operationalize it. The new criteria were tested for the first time in the 2013 STEADFAST series exercise. The overall findings were reported to ACT.

The Centre has led several projects

over the past two years that have contributed to current, real world operations. One of the Centre's largest contributions was an assessment conducted on the Afghan Mission Network (AMN). This task required substantial preparation, time and resources. The Centre deployed two teams to Afghanistan for a duration of four weeks. They visited four HQs representing different echelons of the ISAF C2 structure: HQ ISAF (in-theatre strategic level), HQ ISAF Joint Command (operational level), Regional Command North (RC-North) and Provincial Reconstruction Team Meymaneh (PRT MMN) (tactical level). The lessons identified from this mission contributed to the development of the Federated Mission Networking (FMN).

The Centre provided operational assessment teams in support of Operation UNIFIED PROTECTOR (OUP) and OCEAN SHIELD. We have provided Subject Matter Experts (SMEs) in support of various exercises to include the Joint Warfare Centre (JWC) in support of the STEADFAST series, the Joint Force Training Centre (JFTC) in support of Regional Command North and "Above KANDAK" training and Supreme Headquarters Allied Powers Europe (SHAPE) J7 in support of their evaluation teams during HQ certification exercises.



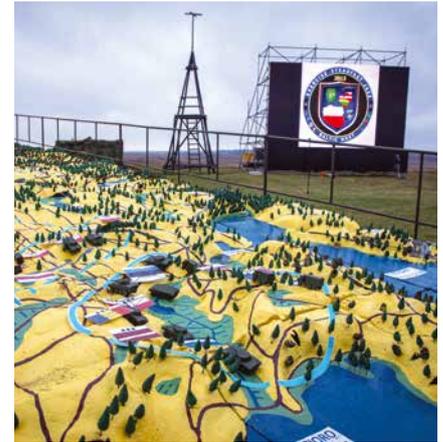
**THE C2COE PROVIDES** expertise in Command and Control to several developing NATO initiatives including reduced HQ structure, deployable HQ concept/Joint Task Force (JTF) HQ, maritime security, Smart Defence and the Connected Forces Initiative. In addition, the Centre supports events such as the Coalition Warrior Interoperability eXploration eXperimentation eXamination eXercise (CWIX), Technology for Information, Decision and Execution Superiority (TIDE Sprint), and the Concept Development and Experimentation (CD&E) Working Group as well as many other working groups.

One of our latest engagements is cooperation with the Joint Air Power Competence Centre (JAPCC). The Centre will provide Air Command and Control (AC2) SMEs in support of the Comprehensive Operational Planning Directive (COPD) course at the NATO School in Oberammergau.

Since our inception, the C2 COE has organised and conducted annual seminars and workshops focusing on Command and Control. Indeed, the Centre's latest seminar, "Exploring Command and Control in an Information Age" took place 4-6 March 2014 in Tallinn, Estonia.

Estonia is the most recent addition to the C2 COE. It is technologically a very advanced country which, among other reasons, made it an ideal location to host this year's seminar. The cyber domain has been increasingly more important in every field of C2 and Estonia also hosts the NATO Cooperative Cyber Defence COE (CCD COE). The CCD COE provided speakers and added to our already highly educated audience, contributing to our discussion about the effects of the cyber domain in the information age. The conference successfully brought together 114 specialists from 17 Nations representing 62 different NATO and non-NATO institutions.

The C2 COE's relationship with JWC, JFTC and JALLC is important to us not only for support to exercises but it also provides mutual benefit advancement of policy and doctrine in the C2 domain. Currently, JWC and C2 COE interaction has been limited to augmentation of JWC Training Teams during Phase IIB and IIIB of NATO Response Force (NRF) exercises with SME support provided by the C2 COE. The C2 COE support of JWC exercises allows the C2 COE to stay current on the latest developments in C2 from the field while using this experience to focus our conceptual projects.



The JWC receives expertise in C2 as well as more evaluators to ensure the exercise goals are met. This is a *win-win* situation for both entities and also for NATO, but this relationship can be further developed. JWC's unique position as the warfare centre for NATO HQs gives it the opportunity to influence changes to policies and doctrine. In the future, the C2 COE hopes to work more closely with the JWC to refine the human factors, Information Knowledge Management and staff processes domains. The C2 COE believes this synergy between the COE and JWC will improve training, techniques and procedures in the field of C2. ✦



"The C2 COE has led several projects over the past two years that have contributed to current, real world operations."

A Norwegian CV9030 during a patrol in Faryab Province, Afghanistan. Photograph by ISAF PAO.



# Joint Chemical, Biological, Radiological and Nuclear (CBRN) Defence

## Centre of Excellence

<http://www.jcbrncoe.cz/>

"One of our most important activities continues to be providing support to NATO exercises and training events, primarily through working with the Joint Warfare Centre within the context of the STEADFAST series of exercises."



**F**OR SEVERAL YEARS NOW, the Joint Chemical, Biological, Radiological and Nuclear Defence Centre of Excellence (CBRN Defence COE) has been NATO's single access point to the full spectrum of CBRN expertise. Its competence lies in razor-sharp knowledge of CBRN defence-related doctrine, including custodianship of several key CBRN documents as well as chairmanship of the CBRN Doctrine and Terminology Panel. Other skills and activities include concept development, CBRN courses, high-level meetings and conference organisation. The COE not only contributes to raise NATO exercise standards, but cur-

rently also co-chairs the CBRN Training and Exercise Panel. One of its most important activities continues to be providing support to NATO exercises and other Alliance training events, primarily through working with the Joint Warfare Centre (JWC) within the context of the STEADFAST series of exercises.

More than five years have elapsed since the COE first provided support to the NATO Response Force (NRF) certification process as part of the NRF 10 certification during exercise STEADFAST JOINER. Since that momentous occasion, the COE has continued to provide CBRN expertise throughout all aspects of the STEADFAST exercises, and this support is firmly integrated into its Programme of Work. Various COE members routinely attend all exercise phases with the sole aim of improving Alliance performance and CBRN Defence capabilities.

In order to influence the preparation of NATO Training Audiences within the CBRN domain, the COE actively attempts to match its ambitious intent to attend all stages of the STEADFAST exercise planning process, beginning with a major event: the Exercise Specification Conference. Usually, this is where the COE first connects with the next STEADFAST iteration, thus enabling it to contribute to the development of one of

the documents that are most critical to the exercise, which is the Exercise Specification (EXSPEC). Why does the COE attend this conference? The main reason is to ensure that the CBRN defence aspects are reflected not only in the exercise objectives, but also in the tasks set for the JHQ and its subordinate commands. During the Initial and Main Planning Conferences, where the content of the exercise is broadly discussed, the COE tries to identify EXCON manning gaps at the NATO Command Structure level in an effort to close them, using resources of its own.

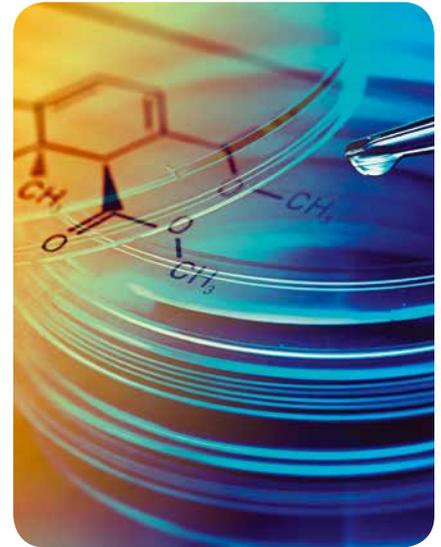
One of the most prominent benefits for the JCBRN Defence COE, as well as for the JWC, is the COE's participation in the JWC Training Teams' (TT) set-up for the Crisis Response Planning, likewise for the exercise execution phase. The JCBRN COE's Observer/Trainer provides support across the entire spectrum of CBRN operations in order to facilitate CBRN defence-related training objectives for exercise Training Audiences in the most effective manner.

The COE also provides support critical to the development of the Weapons of Mass Destruction (WMD) portion of the scenario/country books for the virtual states. COE inputs include the basis for the further development of other scenario material. The COE also develops the Toxic Industrial Material site databases as well as a generic





Members of the multinational CBRN Battalion take measurements to determine levels of contamination during CBRN exercises as part of exercise STEADFAST JAZZ 13. Photograph by NATO.



description of the belligerent's WMD capabilities. These provide foundations that are critical to the CBRN incidents scripters' work and allow them to prepare challenging and realistic CBRN play for the Training Audiences during incident development and MEL/MIL scripting workshops.

**THE STEADFAST EXECUTION** phase is, of course, the culminating moment for all participants. For the duration of this phase, the COE operates across all exercise areas, supporting the TTs at the JHQ and component commands as well as SHAPE's certification teams. During the execution phase, what the COE wants most of all is to assist the JWC with EXCON and the lessons

learned process, and SHAPE J7 with the evaluation and analysis process. As there is a persistent lack of CBRN specialists within the NATO Command Structure, the COE augments evaluation teams for the CBRN Joint Advisory Team, the CBRN Battalion, the lessons learned officer, the scenario team including CBRN Response Cell advisors and TTs of CBRN Subject Matter Experts. All of these components work closely with the overall MEL/MIL team in an effort to initiate dynamic scripting when necessary.

In support of future NATO CBRN defence capability development initiatives, the COE plans to extend its evaluation and analysis expertise, mainly through the identification and collection of observations/les-

sons identified and the subsequent analysis of these items so that it will be able to more greatly contribute to the NATO lessons learned process. Other future activities may include the introduction of remote modeling and simulation support in order to enhance the effectiveness and realism of the CBRN play in the upcoming NATO exercise. Besides the usual long term cooperation, the COE also plans to extend the JWC support by providing CAX operators from its Modeling and Simulation Section, starting from the early planning process of the exercise, in order to analyse possible ways of incorporating CBRN hazard warning and prediction tools and outputs to the Joint Theater Level Simulation (JTLS) scenario. ✦



"JCBRN Defence COE has been NATO's single access point to the full spectrum of CBRN expertise."

Photograph by JCBRN Defence COE.

## Joint Air Power Competence Centre Centre of Excellence

<http://www.japcc.org>

"The Connected Forces Initiative will provide an effective, but above all efficient alternative to the operational focus of the last decade. Coherent education and training should offer the bedrock for the development of individuals and teams so that they have the cognitive ability to assimilate and understand complex situations and cultures and become comfortable with ambiguity and risk."



**T**HE JOINT WARFARE Centre (JWC) in Stavanger and the Joint Air Power Competence Centre (JAPCC) in Kalkar, Germany, have signed a Letter of Agreement (LoA) to closely interact and coordinate their work in order to collectively and coherently contribute to NATO's transformation.

**AS NATO OPERATIONS** come to an end in Afghanistan, the Alliance finds itself at a crossroads. NATO's focus is shifting from combat operations towards preserving the knowledge gained, and preparing and being ready for future contingencies. The nature of the conflict in Afghanistan has led to new doctrines, new technological developments and new players on the battlefield that the military in the past did not normal-

ly work with. At the same time, in the recent past several conflicts have shown that the way many non-state actors are waging war requires a different response from NATO. Last, but not least, from an Air and Space Power perspective, these conflicts have been largely fought in a permissive environment, which led to the application of Air Power based on Air/Land Doctrine while no air-threat was experienced.

Now it is time to take stock and shift the focus from actual operations to application and implementation of lessons learned and focus on a battle rhythm of Education, Training, Exercises and Evaluation (ETEE). The Connected Forces Initiative (CFI) is the chosen vehicle for this back-to-the-future situation and it will hopefully provide an effective, but above all efficient alternative to the operational focus of the last decade. Coherent education and training should offer the bedrock for the development of individuals and teams so they have the cognitive ability to assimilate and understand complex situations and cultures and become comfortable with ambiguity and risk.

Especially the Air and Space Power domain has seen tremendous developments over the past ten years; be it the emergence of Unmanned Aerial Systems, increased dependence on space and space-based assets, the challenge of the cyber domain on

the one hand and the changing nature of war through asymmetric warfare, international terrorism and the politically sensitive "collateral damage" on the other. Many of these new developments have resulted in new doctrine, tactics and procedures. This needs to be secured through education, training and exercises.

**THE PRIMARY ENTITY** responsible for organising and conducting NATO Response Force (NRF) certification, and many other large-scale, joint-level exercises is NATO's Joint Warfare Centre (JWC) in Stavanger, Norway. JWC organises medium to large-scale exercises aimed at the strategic and operational level in which all of the Command and Control layers of the NATO Command Structure, but also the NATO Force Structure can be trained and certified for the NRF and other deployments, or to increase their operational preparedness and readiness.

During the planning and execution of the recent exercises it became apparent that JWC alone lacks sufficient manpower, especially to support the Air and Space domain. This led to an initiative in which JWC and the JAPCC agreed to cooperate in order to better support the Air and Space Power part of large-scale NATO, and JWC-led, exercises.



**THE FIRST RESULT OF** this cooperation was JAPCC's contribution to exercise STEADFAST JAZZ 13. Early on in the exercise planning process, it was agreed that JAPCC would, based on the newly created SKOLKAN scenario, develop the OPFOR Air Concept of Operations (CONOPS) for the exercise. During the scripting of the Main Events/Incidents List (MEL/MIL) in September 2013 it became apparent that this had to be developed into a full scale dynamic air play as the scenario had to provide sufficient input for AIRCOM Ramstein to be able to exercise all of their processes in order to achieve the Full Operational Capability status.

JAPCC prepared the full dynamic scenario and developed the Air Operations Directive, the Airspace Co-ordination Order and the Air Tasking Order for OPFOR Air. Moreover, a complete Theatre Ballistic Missile (TBM) scenario was developed and space/cyber incidents were created. This was supported by a number of MEL/MIL incidents and a complete Intel scenario. During the execution phase of the exercise, the JAPCC deployed its OPFOR Air team, enhanced with a database manager from CAOC Uedem, and an Intel specialist from AIRCOM Ramstein.

JAPCC's participation in exercise STEADFAST JAZZ 13 can be considered a success. Not only was JAPCC able to deliver the required Air and Space expertise to JWC and to STEADFAST JAZZ 13 in particular, it also paved the way for further development of future JAPCC support to exercises where Air and Space power expertise is requested. At the same time, participation in these kinds of exercises provides JAPCC with a return on investment. JAPCC members were deeply involved in the Operational Planning Process (OPP) including the strategic level, the (operational) JFAC level, and nearly the tactical level. This provided JAPCC members with valuable knowledge and experience and at the same time it kept JAPCC up-to-date on recent developments in exercise simulation techniques and the Air OPP.

This participation can have an effect on new developments taking place within the NATO ETEE environment as laid down in the Bi-SC Directives 75-2, 75-3 and 75-7. The currently ongoing process of

appointing Requirement Authorities (RA) and Department Heads (DH) for all of the operational disciplines in NATO should lead to the establishment of RAs and DHs in the Air and Space power domain. Currently, only the RAs and DHs for Air Command and Control are nominated. Through exercise participation, JAPCC is able to broaden its knowledge and observe the lessons that can be used in its role of advisor to both RAs and DHs as required. Furthermore, JAPCC has been requested by Allied Command Transformation (ACT) to accept the role of DH for Space. JAPCC is currently assessing the implications for its resources.

**JAPCC WILL CONTINUE** to support exercises in the future, this being one of its responsibilities as a COE according to the MC Concept for Centres of Excellence. For the near future, JAPCC will provide similar support to exercise TRIDENT LANCE 14. JAPCC will also contribute to the development of a complete new scenario, called SOROTAN, for which all OPFOR air ca-

pabilities, such as the Order of Battle, Air Forces bed-down, the Integrated Air Defence system and the Air Command and Control system, will be developed.

One of the first visible results of NATO's CFI is a major exercise that will be conducted in 2015. This "flagship" exercise, TRIDENT JUNCTURE 15, will be the first exercise to use the SOROTAN scenario. This investment of JAPCC's knowledge, experience and manpower obviously brings benefit to JAPCC as well. Not only will it provide JAPCC members with an opportunity to contribute to an exercise and get back with their feet in the mud, but it will also provide JAPCC with a broader perspective on the latest developments in the application of (joint) Air and Space Power and help to further the Air Command and Control processes in which JAPCC plays a part. In other words, JAPCC's contribution with Air and Space expertise to JWC works two ways: JWC is supported with a "critical enabler" and JAPCC gets to have its "feet in the mud" and stay in touch with the latest developments. ✦



"The Joint Air Power Competence Centre delivers crucial Air and Space Power expertise to NATO exercises."

## NATO Modelling and Simulation (M&S)

### Centre of Excellence

<https://transnet.act.nato.int/WISE/COE/Individual/MS/index.html>

"The cooperation between the Joint Warfare Centre and the Modelling and Simulation (M&S) Centre of Excellence is CFI-oriented and aimed at increased 'smart' training."



**N**OWADAYS, MODELLING & SIMULATION combined with Education and Training (E&T) aims at increased capabilities in NATO and Partner countries by providing subject matter expertise on all aspects of the M&S activities. In these times of austerity, M&S is tasked with overcoming the challenges by providing its essential support to apply M&S in order to stimulate Training Audiences (TAs) during training events and exercises.

NATO M&S COE is located in Rome, Italy, and was accredited in July 2012. Upon its establishment, a pool of M&S Subject Matter Experts was quickly identified. The NATO M&S COE organisation has four pillars: Concept Development and Experimentation; Doctrine Development and Standards; Education and Training; Analysis

and Lessons Learned. Ever since the Centre was established, even before its accreditation as a NATO COE, a solid and valuable cooperation has existed with the Joint Warfare Centre (JWC). In particular, M&S COE and JWC's Computer Assisted Exercise (CAX) Branch embarked on cooperation when the CAX/Operator Certification Course (CAX OCC) was handed over to us. During the November 2009 Concept Development and Experimentation Conference in Rome, JWC and M&S COE agreed that the COE should take over the entire responsibility of organising this course. We are proud to announce that the 7th CAX OCC will take place in Rome in June 2014, for the third time running. Today, the CAX OCC is among the accredited "NATO Selected" courses listed in the Education and Training Opportunities Catalogue (ETOC) and it is also published on the NATO Electronic Individual Training Education Programme ([e-itep](#)) website.

It is important to make you aware that the course is being tailored and updated continuously to reflect current training objectives and to ensure that it matches with how NATO envisions that CAX should be carried out.

**M&S COE** is currently receiving a new accreditation, which will result in a slight amendment to the course title to become

"CAX Specialist Certification Course". The course mainly aims at giving the participants the knowledge they need to perform their duties as CAX specialists during NATO/PfP exercises, which are conducted in accordance with Directive 75-3. The main topic of the course is the use of software and other tools during NATO exercises, but it also provides an overview of the processes and management of the Main Events List and Main Incidents List (MEL/MIL), with focus on the role of the Response Cell team during the execution phase of an exercise.

The overall idea behind the course, an idea which is shared by both JWC's CAX Branch and M&S COE, is to establish a pool of experts who may be called upon to support any NATO CAX. For example, during the last STEADFAST JAZZ exercise, CAX-certified personnel from the U.S., Turkey, France and Italy were deployed to the Component Command Response Cell (CCRC) at JWC, Stavanger. For this reason we strongly believe that attending the CAX course is a good opportunity for any individual to further develop his personal skills. Also, it might prove to be a good investment for a nation to send personnel to attend the course, as they will use what they have learned to support national CAX too. Consequently, this pool of certified CAX specialists will become an important shared resource.



**IN ADDITION TO** cooperation for the CAX OCC, the M&S COE Programme of Work (POW) also supports JWC during NATO Response Force (NRF) exercises. This request for support was submitted by Allied Command Transformation (ACT) and approved by NATO M&S COE's Steering Committee. Basically, M&S COE takes up some essential CAX Branch positions during the execution of the NRF series of exercises. Our personnel deploys twice a year to Stavanger in order to ensure efficient and direct support to the Response Cells. Special support is given to the Air Component Command Response Cell (two officers), and to the Special Operations Component Command Response Cell (one officer). Actually, by supporting these cells, M&S COE personnel is able to polish their CAX skills in order to continue to give relevant information during the lectures. Moreover, JWC's CAX Support Branch provides valuable support for the M&S basic course. The aim of the course is to give the participants the introductory knowledge needed to properly understand and address issues related to military environments. The third

course held by M&S COE is scheduled for November 2014 and will have a capacity of 25 participants.

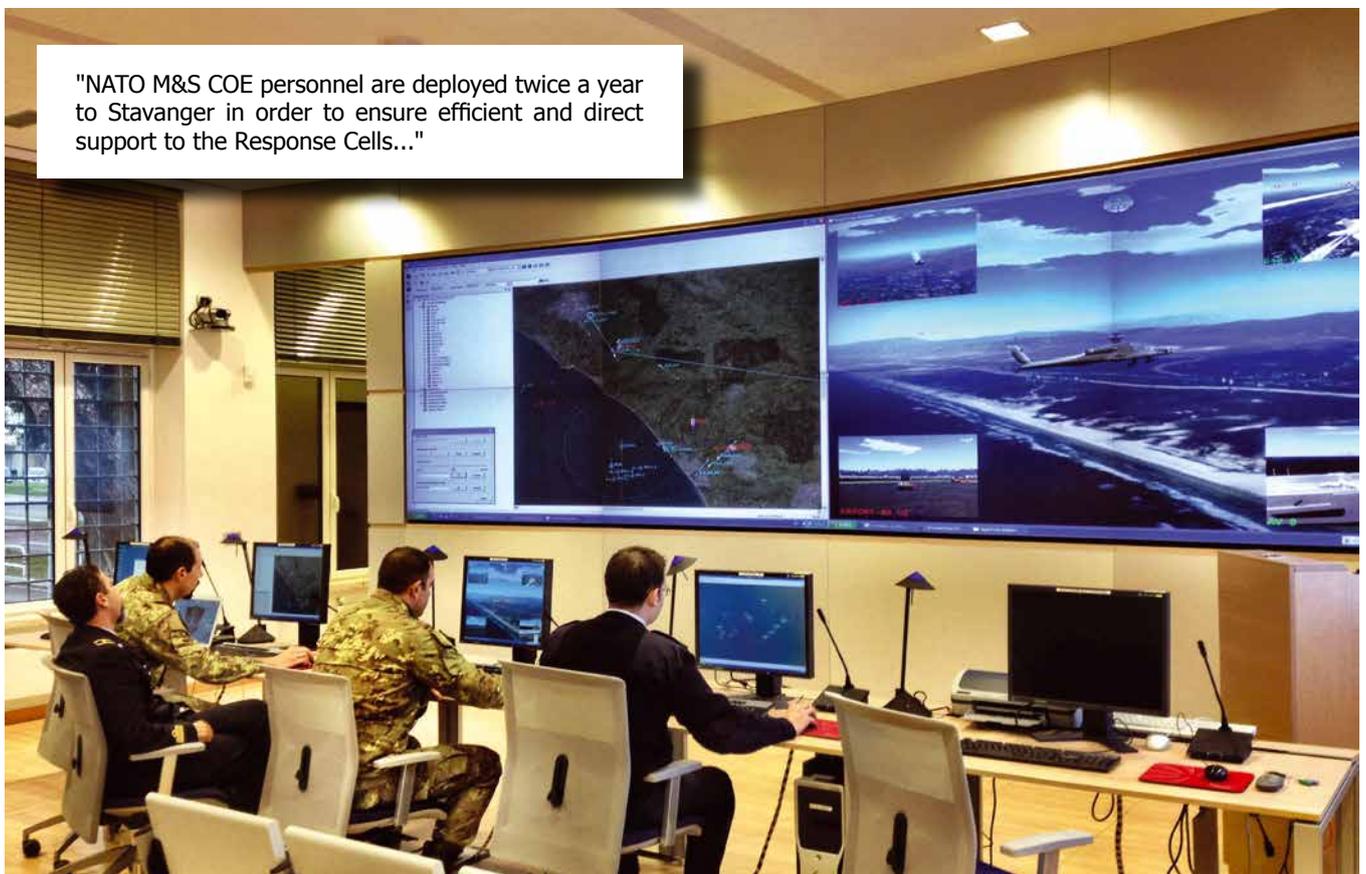
**TEAMWORK ALSO PLAYS** a central role when organising the CAX Forum. The Forum focuses on technical issues and operating procedures related to simulation-based exercises and training support. The CAX simulation/training centre staff includes personnel and experts from 26 countries. The 2013 Forum's primary goal was to promote the exchange of information and "best practices" among NATO and national simulation/exercise centre staffs, and with 200 participants attending the previous course, we look forward to yet another successful Forum, this time at the Ataturk Wargaming and Conference Centre, Turkey, on 16-19 September 2014.

The cooperation between NATO M&S COE and JWC on training makes it possible for NATO/PfP Nations to ensure that the right people receive the right training. In order to further improve cooperation it is necessary to avoid redundancy in "smart" training, and this is best done by

sharing M&S and CAX expertise across NATO and Partners. Even though COE will be managing the entire course, the Centre still needs the JWC CAX Branch's support in sharing CAX doctrine, M&S tools, and Command and Control tools evolution and training. In addition, even if M&S COE has already proved its value in support of training at all levels, the importance of live exercises is also essential.

Finally, M&S COE would like to send a special thanks to the JWC, and an extended thanks to its CAX Support Branch for providing us with continuous support in conducting training activities for NATO and Partners. When looking to the future it might prove to be a challenge for M&S to, for example, live up to the notion of "M&S as a service", that is to say training units and people the easiest, fastest, most cost-effective and secure way. JWC contributes largely to giving NATO M&S COE visibility in general, and not only in training contexts. Therefore we can say that the cooperation between the JWC and M&S COE is Connected Forces Initiative (CFI)-oriented and aimed at increased "smart" training. ✦

"NATO M&S COE personnel are deployed twice a year to Stavanger in order to ensure efficient and direct support to the Response Cells..."



Photograph by M&S COE.



# JWC

**ON THE WEB and FACEBOOK**

For the full articles, visit [jwc.nato.int](http://jwc.nato.int)

■ **TRIDENT JAGUAR 14:** NATO began exercise TRIDENT JAGUAR 14 (TRJR 14) on 7 May, testing the Alliance's ability to respond to crises anywhere in the world, in short time. The exercise, led by NATO Allied Command Transformation (ACT) and directed by the Joint Warfare Centre (JWC) included elements of Naval Striking and Support Forces NATO (STRIKFORNATO), NATO Rapid Deployable Corps-Spain (NRDC-ESP) and the U.S. Navy command ship, USS Mount Whitney, the Command and Control ship for STRIKFORNATO. TRJR 14 is the first exercise where national headquarters from the NATO Force Structure (NFS) are trained and certified as NATO Joint HQs, able to conduct Small Joint Operations either from land or sea (maritime, land, air forces working side-by-side under one common leadership).

During the exercise, NATO Special Operations Headquarters (NSHQ) was also certified as fully capable to undertake NATO Special Forces operations on behalf of the Alliance. The 10-day exercise trained and evaluated NRDC-ESP and STRIKFORNATO's ability to plan and conduct Crisis Response Operations to restore peace and security, and to prevent further destabilisation. Both HQs also supported reconstruction and humanitarian assistance efforts during the remote, joint operations. To achieve this they used the fictitious SKOLKAN scenario, created and developed by the JWC.

With more than 20 nations directly involved in the execution of TRJR 14, the exercise also showcased NATO's commitment to sustaining a ready and capable interoperable force. "We are working together," said Spanish Army Lieutenant General Rafael Comas Abad, Commander NRDC-ESP. "I think this shows clearly a message in the uniqueness of the engagement of our countries to defend each other when needed. This is our job." (By Senior Chief Hendrick Dickson, United States Navy, HQ ACT.)

"**AS OPFOR AND TRAINERS**, our challenge is to create operational-level dilemmas for the Commanders so that the tensions created by pulling them in different directions results in staff interaction to develop recommendations on which the Commanders can make sound decisions. This helps to train them to **MANAGE AMBIGUITY, RISK AND UNCERTAINTY** under pressure. We strive to make the arguments finely balanced so that the Commander has to use both art and science in reaching a conclusion and then having to live with the consequences, as in real life. An example might be: 'Do they pursue a fleeting opportunity but carry additional risk, or do they wait until they have a better correlation of forces, but may be exposed to adverse media and civilian population reactions in doing so?' Decisions that force them to consider changing their main effort, priorities, resource allocations or deployment of operational reserves, **WHILST UNDER THE GAZE OF THE MEDIA** — including social media commentary — are the kind of decisions they will make in real life."

Royal Marines Major General (Ret.) Roger Lane, Senior Mentor for TRJR 14, interview from the JWC website article titled: "JWC conducts TRJR 14 MEL/MIL Incident Development Workshop".



An exercise roundtable meeting taking place with Host Nation representatives as part of the TRJR 14 scenario.



**Middle:** A simulated press conference. **Below:** A collection of simulated, daily media articles at EXCON building, Menorca, Spain.



"Exercise TRIDENT JEWEL 15 will be a very important event for Allied Maritime Command (MARCOM) on the road to Full Operational Capability. I want to ensure it is a demanding test for MARCOM, which confirms our ability to command a maritime Small Joint Operation. My visit to JWC was extremely useful. Not only to see for myself the hugely impressive facilities here in Stavanger, but also to discuss directly with the team who will help deliver TRIDENT JEWEL 15."

**ROYAL NAVY VICE ADMIRAL PETER HUDSON CBE,  
COMMANDER OF NATO'S ALLIED MARITIME COMMAND**



<SPOTLIGHT> For the article and full interview, visit [jwc.nato.int](http://jwc.nato.int)

## Exercise TRIDENT LANCE 14 (TRLE 14) Interview: Lieutenant General Frederick "Ben" Hodges

Commander, Allied Land Command (LANDCOM)

**Thank you General for giving us this interview opportunity. You are responsible for the high readiness of NATO's land forces so that they can confront the future challenges. How do you see LANDCOM's role?**

— As NATO makes the transition from ISAF to Resolute Support mission, the main priority is to ensure we do not lose the lessons learned after the 10+ years of combat operations. We must ensure we get this transition correct even as we undergo our own transformation with an ever decreasing budget and military drawbacks. LANDCOM has three major roles in the current NATO Command Structure. The first is to facilitate NATO Land Forces' interoperability and effectiveness. In essence, *be the tissue* that links various Nations and training exercises together. Secondly, we focus on *Land Advocacy* throughout the Alliance. We help facilitate doctrine, concept developments, and lessons sharing. Third, and in large part of why we are here at JWC now, is to be ready to deploy as the Land Contingent Command for Major Joint Operation+, with three NATO Corps HQs under our command.

**What is NATO 3.0?**

— NATO 3.0 is post ISAF, beyond 2014. Training plays a vast role in NATO 3.0 as

we look to maintain interoperability; especially as Nations look to scale back budgets and military capacities. One way we do this is through the Connected Forces Initiative (CFI). The Alliance must look at how to maintain training opportunities and uphold standards during budget constraints. Interoperable CIS and NATO standards allow for training to be maximised for each Nation. The JWC plays a vital role in developing and creating various training scenarios for NATO units. JWC's development of these scenarios is essential to the success of each exercise year in and year out. We want to be a part of that to help grow and enrich the fidelity of the sophistication of the scenarios.

**Could you tell us about the visit?**

— My visit to JWC has been very productive and encouraging. The staff is extremely professional and it is evident in the products you create for each training event. The Centre itself is much larger than I realised and well-equipped to take on the many training challenges the future holds. I hope many NATO units get the opportunity to not only visit JWC, but also train at one of your superb complexes.

**What are your expectations from exercise TRLE 14? What have been some of the areas of interest during this visit?**

— My expectation for TRLE 14 is to

have a realistic, multi-echelon training event that employs the CFI and allows for interoperable training amongst several distributed units. If we can achieve this, I will be very happy with the outcome of the event. I want to show that the Alliance can do high-end sophisticated, multi-echelon training that is affordable, but will require changing some mindsets about CIS and training.

**How important is the concept of connected forces and readiness mindset in reinforcing NATO?**

— Extremely important. As I stated earlier, as Nations deal with reduced defence budgets and military capacity, it is very important we utilise the CFI. None of us is going to operate alone in the future. We are always going to operate as an Alliance or a Coalition; and that Coalition will almost certainly consist primarily of NATO Members. Readiness is also incredibly important in reinforcing the NATO Response Force. SACEUR himself stated that we must make the transition from deployed operations in Afghanistan to a more contingency and training mentality within NATO. The NRF readiness remains forefront as threats and security issues still remain throughout the world.



Interview by Inci Kucukaksoy,  
JWC PAO. 12 March 2014.

# CROWDSOURCING



## IS NATO READY?

By Dragos Negoitescu and Mark Blaydes  
Scenario Development Section  
Joint Warfare Centre

### What is crowdsourcing?

Crowdsourcing is a new and powerful way of using social media for problem solving. One definition is: "Crowdsourcing refers to harnessing the skills and enthusiasm of those who are prepared to volunteer their time contributing content and solving problems."<sup>(1)</sup>

It would perhaps be better to recognise that two or more people working together will always achieve more than one on their own. If you follow that analogy by opening up the discussion to as many people as possible, using Information Technology (IT) to gather their views, it is possible to understand that this can be a very powerful method for solving problems. However, this methodology has no NATO-agreed definition, and is only accepted in a few nations.

### Why (now) this article?

As John Verdon was mentioning in his paper *THE WEALTH OF PEOPLE*<sup>(2)</sup>, we are in an era when "technology is enabling more than just expanded connectivity and networks." Now, technology offers greater and greater reach to "large pools of knowledge" and, the authors would humbly add: large and larger pools of more and more diverse judgement. The authors would name this large, diverse pool: "the crowd's opinion". Today, "crowdsourcing" is more and more broadly applied by various organisations seeking to please their customers (in the case of commercial ones) or the public (in the case of governmental ones). In this article, the authors will extrapolate from the general concept of crowdsourcing to outline the reason why NATO should consider crowdsourcing.

### A look outside the military box

How does civilian society use crowdsourcing? "Crowdsourcing is leveraging the power of the many to achieve what was once relegated to a few specialists."<sup>(3)</sup>

It has been recognised that "the crowd has way more than just wisdom. It has talent, creativity, and it is amazingly productive. (...) They build online communities of passionate social customers and tap them for service, knowledge and ideas."<sup>(3)</sup> The crowd has a "strong desire to collaborate; the crowd contributes quickly; the crowd jumps at opportunities to cultivate talent and loves passing knowledge on to others. (...) Using the power of the crowd, smart organisations deepen their knowledge bases and rapidly accelerate innovation by looking at thousands of ideas instead of several."<sup>(3)</sup>



Take the example of Wikistrat<sup>(4)</sup>; the company crowdsources content in an attempt to predict future possible scenarios. Wikistrat is characterised by a mixture of individuals with different levels and types of expertise conducting what they call "crowdsourced simulations": *"The simulations are designed to explore the current social, political, economic and geopolitical threats to stability, and to determine where a country (read: society) is heading in terms of its social, political, economic and geopolitical future. (...) The future of geopolitical analysis will belong to the crowd"*.<sup>(5)</sup>

## A look in the mirror

In the context of seeking to increase its forces' connectivity (the CFI – Connected Forces Initiative) and Members' resource sharing, or the Smart Defence concept, outsourcing and optimising the use of common (re)sources seems to be critical to modern NATO. Therefore, today, maybe more than ever, it is the time to review how much attention is given to how the entire corporate knowledge resource is exploited across NATO. Meeting the functional requirements with the proper expertise combined with national funding issues seems to become just an idealistic desirable rather

than an achievable objective to NATO Human Resources (HR) departments. What if NATO would start to look at how other organisations have successfully applied crowdsourcing both internally and externally? This article argues that crowdsourcing requires little effort and proposes a low-cost method not only for resource optimisation, but also as a method, which contributes to maintain NATO's relevance as a security provider worldwide. It should be needless to mention that NATO is nowadays requested to provide security in a much more complex dynamic and socially very aware environment.

The authors do recognise that NATO has lately made a couple of attempts to reach to the outer world. The Civilian Fusion Centre (CFC) was for example one such attempt. Unfortunately, the CFC was recently shut down. At a very short glance one may say that, although laudable, the excessively (in the authors' opinion) filtered interaction with the external actors or individuals, obstructed this initiative to become "the gateway" to the outer world. Another laudable initiative is the Innovation Hub established by Allied Command Transformation (ACT) in an attempt to connect people within and from outside NATO willing to contribute to



**In the context of seeking to increase its forces' connectivity (CFI) and Members' resource sharing, or the Smart Defence concept, outsourcing and optimising the use of common (re)sources seems to be critical to modern NATO."**

the preparation of the organisation for future challenges. But still, the membership is filtered and again the authors consider the chances of this initiative to help NATO reach the crowd's opinion to be low if not concerted with other similar initiatives.

## NATO as a large politico-military (read: global) organisation

The idea of writing this article was sparked among other reasons by the inspirational speech delivered by Jamie Drummond<sup>(6)</sup>: *"Let's crowdsource the world's goals"* in a TED speeches session, in 2012. Due to its involvement in crises such as Middle East (Iraq NTM), Central Asia (Afghanistan – ISAF) and Horn of Africa (Ocean Shield), NATO has overpassed the limits implied by its own title (North Atlantic Organisation). The recent endeavours require more and more that NATO interacts with environments far beyond the geographical and



**Crowdsourcing** is a methodology that is closely aligned with some of the most important NATO initiatives. It is an ideal force enabler, providing areas identified in the **Connected Forces Initiative** such as "harmonise efforts", "identify areas for collaboration and potential synergies" and "better use of technology". Furthermore, the "shift from operational engagement to operational preparedness" will require an increased capacity to look far into the future in order to anticipate future potential crisis and imagine the type of response NATO should then provide, rather than planning to react to an already existing crisis. Crowdsourcing not only addresses concerns in the CFI, but also **Smart Defence** and enhances the **Comprehensive Approach**. It should be noted that Allied Command Transformation has not only created courses for Social Media through Crowdsourcing (February 2014), but has already taken the first steps to exploit this methodology.

**CROWDSOURCING**



[www.act.nato.int/innovationhub](http://www.act.nato.int/innovationhub)





TRJR 14 White Cell, Stavanger, Norway. Photograph by JWC PAO.

cultural boundaries envisaged by the original treaty signatories. NATO political leadership has acknowledged this very fact in order to address the new challenges, which reach far outside the military comfort zone, and into politics, economy and social areas. This new age has also demanded far more attention to information (particularly at the strategic level), and much more awareness of infrastructure needs. NATO, in order to address these needs, has developed the Comprehensive Approach (CA).

The "*WHAT* needs to be done" has been outlined in the concept paper, the "*HOW* must be done" has been somewhat addressed (see the Knowledge Development concept implementation status), but while struggling to implement the CA, many started to realise that the predominant military nature of NATO's human resource represents a de facto immovable roadblock. To declare operational success, NATO's Commanders now have to do something completely different from what they are trained and educated to do. They have to "*contribute to the stabilisation of the society*". Attempting to address this issue and, being inspired by other governmental/non-governmental or commercial institutions' efforts in this direction, the authors suggest that crowdsourcing might be something that NATO should consider.

## Scoping the issue

This part of the article is about the scope of the crowdsourcing applicability. While writing the first draft, we realised that either half of the entire issue of scope is excluded or, better, we needed to change the title in order

to address it holistically. This is the reason why now the article refers to both dimensions: internal crowdsourcing<sup>(7)</sup> and external crowdsourcing. You could ask: how can you treat such different dimensions with the same approach? Let's describe the two dimensions and, in all probability, the reader will easily get this question answered. But before proceeding any further, it is important to highlight one of the conditions for success when thinking to apply crowdsourcing, as James Surowiecki<sup>(8)</sup> stated in his book of reference *THE WISDOM OF CROWDS*: "*the conditions that are necessary for the crowd to be wise are diversity, independence, and a particular kind of decentralisation.*"

## Internal dimension

Think about NATO as a distinct world. There are personnel belonging to 28 Nations (diversity) and working in numerous geographical locations across the globe (independence), all connected to the same secure virtual environment and, more importantly, all following the same goals defined by a unique politico-military leadership, the North Atlantic Council (NAC), but each with their particular task (relative decentralisation).

Thus, NATO meets the conditions of a diverse, independent and relatively decentralised pool of opinions. Maybe this is one of NATO's greatest benefits. NATO represents an amazing venue for staff of different nationalities, different services and different specialties to exchange safely, sensitive opinions. However, it is the authors' opinion that very little of this potential is used. Or, better said, the organisation currently

fails systematically to exploit this resource to its maximum extent. Many of the "bright brains" are prevented from contributing to solving common issues due to lack of an appropriate formal framework (read: agreed methodology). Thus, many "bright ideas" occur in informal ad hoc venues, but they are not corroborated, distilled and delivered to the ones in need *i.e.* the decision-makers. In short, extremely valuable knowledge resource is wasted nonchalantly.

Successful broad collaborative platforms/models are in place and continuously evolving both within and outside NATO's world. Maybe it is time for NATO to start rethinking the methodology on which the corporate knowledge resource is harnessed and exploited across the Alliance. Staff officers with sound diverse experience are everywhere in NATO, in all HQs, and at all levels. Imagine NATO as an organisation allowing each of its Members to quickly understand the priority of challenges that the decision-makers are confronted with. This would allow good, willing and available knowledge resources (regardless of their assignment or deployment) to immediately contribute, and, thus, support the process. How accurate and valuable would the result of such common effort be to the decision maker? Well, paraphrasing James Surowiecki, the authors argue that many are smarter than the few, no matter how bright those few are...

NATO has already taken the first tentative steps towards use of this powerful methodology. For example ACT Innovation Hub of 2013, where interested individuals from both within and outside of ACT were invited to brainstorm how NATO can use social media more efficiently. It was quickly recognised that this "crowdsourcing" activity highlighted a lack of training in social media within NATO. To close this gap, a NATO Social Media Course<sup>(9)</sup> has been established and the first course started in mid-February 2014.

## External dimension

The Comprehensive Approach and the Knowledge Development (KD) concepts address the issue of ensuring more correspondence between the military and civilian institutions' goals, by means of conducting "comprehensive planning". So-called "White Cells" have been embedded into military



planning groups; positions such as Political Advisor (POLAD), Legal Advisor (LEGAD), Culture Advisor (CULAD), Gender Advisor (GENAD), and Civil/Military Analysts have been created at operational and strategic command levels, but it seems that achieving comprehensive, holistic understanding of the diverse spectrum of issues is far from easy. The operational planners face great difficulties while designing the Operation Plan (OPLAN) and, maybe more importantly, NATO forces face even more difficulties while trying to parallel the OPLAN to the complex reality on the ground. No wonder; it is unrealistic to assume that a handful of people will accurately intuit the issues of millions. In the outer world, experts have understood that attempting to meet the expectations of the customers, especially when the service/product is addressed to heterogeneous groups, requires close attention paid to the specific needs of each and every individual. Nowadays, more and more commercial companies closely interact with their customers and crowdsource solutions using the wisdom of the crowds to shape their strategies for future actions. Why should not NATO do the same when attempting to intuit the complex needs of a society in a troubled environment?

The (Wisdom) crowdsourcing could bring the NATO OPLAN in resonance with local populace needs, implicitly improving the public understanding and support. Subsequently, the chances for the newly created institutions to last longer will increase. Will this be beneficial to the political ultimate aim of instilling long-lasting stability in troubled areas? Most likely, yes.

However, the discerning amongst you will already be wanting to cry "what about security?" The very success of crowdsourcing depends on opening it up to the maximum number of people with different experience and knowledge than merely the average military officer. Obviously, there are elements that will need to be retained inside the military bubble, but in non-warfighting roles where the military spectrum is less important as a stand-alone element, and it is more important to make use of all available skills and good will in the Comprehensive Approach arsenal, the needs of the information will often override the security concerns. NATO has already seen that involvement of civilian IO and NGO organisations

is an essential part of the planning environment, and the security bubble has hampered this coordination — in some cases beyond their willingness to continue to act as partners in solving the problem.

While it could be argued that security concerns will never allow NATO to properly progress crowdsourcing, the authors would argue that unless resolved, security concerns will continue to hamper the Comprehensive Approach and even put at risk the success of the mission. Addressing the means of allowing military forces to properly interact with all the players in the PMESII domain<sup>(10)</sup>, may also enable NATO to develop an effective crowdsourcing methodology, thus, enabling itself to find out what is "the crowd's opinion" in an attempt to align its actions with the expectations of the people affected by its decisions. Perhaps the CFI Information Exchange Gateway will provide some of these necessary tools to enable NATO to benefit from this methodology.

## Recommendations

It is out of the scope of this article even to outline an implementing strategy for (Wisdom) crowdsourcing in NATO; nevertheless, the authors thought that recommending several principles to follow can be done at this stage:

- **Get agile and attractive:** Replace the rigid (non-interactive database-wise) "lessons learned" with a continuous process of initiating open debates across headquarters. People learn (better) when feeling involved, engaged and will, in this way, be more committed to the solving process. The so-called "lessons learned" are often regarded as issues of others (read: "not mine"), happened in the past, with little relevance to present happenings or to the present persons. Remember that staff officers usually spend only three years in the organisation so, very rarely, are they interested to know/learn what happened before their presence in NATO (or after). Engagement is a luxury, don't waste it.

- **Discourage unhealthy competition:** Discourage the mysterious ownership of an issue. This risks creating unhealthy problem-solving by allowing the owner to use the process as a personal success (if problem solved, obviously). Instead, start promoting the "shared issue solving". Educate staff how to share their problems and seek to reach

to most appropriate contributors, beyond their HQs boundaries. Needless to say that a meticulous appraisal of the knowledge resource is critical; once done this knowledge resource has to be reachable and usable by all, NATO wide.

- **Curate instead of accumulate:** Establish the "content curator institution", which will be in charge of "collecting" and curating content as well as "connecting" and committing contributors<sup>(11)</sup>, rather than only synthetically managing non-interactive sterile content. The curator has to exude *charisma*, *commitment*, *vision* and *passion*, and be able to transcend cultural boundaries to create more effective knowledge-sharing venues by linking and committing people.

There are probably many other useful principles/ideas on how (Wisdom) crowdsourcing could/should be applied by NATO, but this remains to be addressed, with the courtesy of the publishers, in a future article. ✦

## END NOTES:

- (1) USAF – The Air Force Guide to Effective Social Media Use.
- (2) The Wealth of People: How Social Media Re-Frames the Future of Knowledge and Work – John Verdon.
- (3) From Crowdsourcing to Knowledge Management – Lithium Technologies 2012.
- (4) [www.wikistrat.com](http://www.wikistrat.com)
- (5) Why is this company crowdsourcing, gamifying the world's most difficult problems? – Neal Ungerleider.
- (6) Jamie Drummond co-founded the advocacy organisation DATA (Debt, AIDS, Trade, Africa) with Bono, Bobby Shriver, and others in 2002 and ONE in 2004.
- (7) Some will say that wisdom crowdsourcing is by definition conducted outside the organisation, but, as the reader will notice, NATO internal is considered in the conceptual boundaries of this article, as a distinct world.
- (8) James Michael Surowiecki is an American journalist.
- (9) <http://innovationhub-act.org>
- (10) Political, military, economic, social, infrastructure, information.
- (11) Jamie Drummond: Let's Crowdfund the World's Goals.

# THE LANGUAGE OF LEADERSHIP

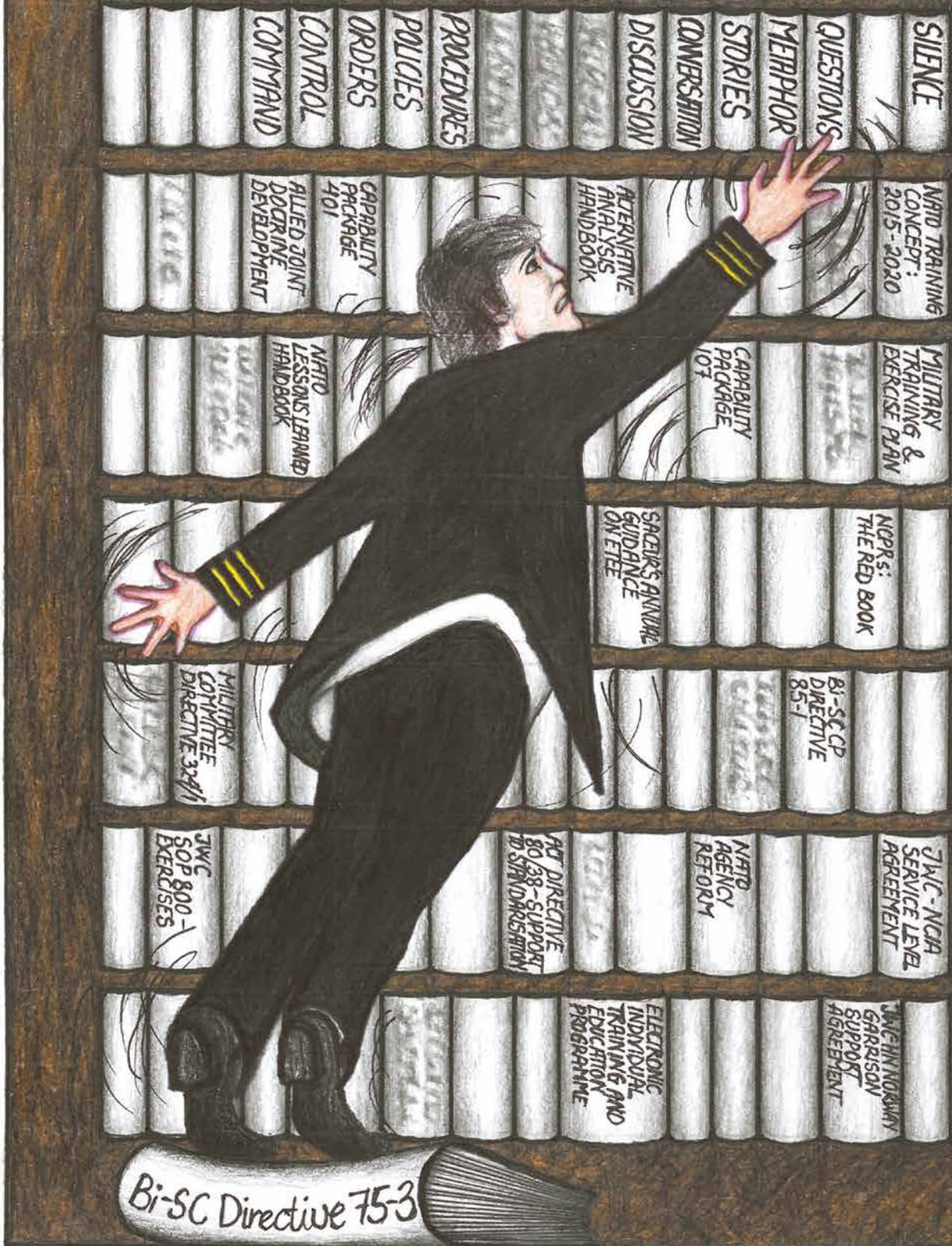


ILLUSTRATION GRY HEGE RINALDO

# THE LANGUAGE OF TRANSFORMATIONAL LEADERSHIP

*Want to be a more effective transformational leader?  
You might make a start by (re)learning a language.*

By Garry Hargreaves  
SMC4 Division  
Joint Warfare Centre

## Introduction

According to Colonel Wesley Fox<sup>(1)</sup>, there are six essential traits that exist within an effective leader; they should be caring, motivated individuals who have a personality and they should be knowledgeable, committed people who communicate. A swift trawl through popular leadership offerings would reveal many other traits such as integrity, courage, respect, honesty, decisiveness, tolerance, tenacity and the list goes on. Now, if you think that these attributes only apply to the senior management level then you might want to skip this article and move on. If you are ready to consider that these leadership behaviours can, and should, pervade all levels within an organisation<sup>(2)</sup> then please continue. The article is framed in this way; that the JWC is full of leaders and one way in which leadership is enacted is in the way we choose to communicate.

The language in everyday use within an organisation is influenced by many things; the organisation's heritage and role, its demography and organisational maturity. The most pervasive influence of all though is the leadership paradigm under which the organisation operates. Western industrialised leadership development through the last 70 years or so reveals that the prevalent language of leadership

reflected the context of the times. This evolution describes leadership through a production line context; through a period defined by an increasingly educated and liberalised workforce and into the highly decentralised knowledge worker age we find ourselves in today.

Industry is not the only sector that is influenced by changing operational environments. Over a decade ago strategic defence planners were predicting that military organisations would be responding to a similar form of organisational decentralisation. The emergence of the "strategic corporal"<sup>(3)</sup> and "Network Enabled Capabilities"<sup>(4)</sup> predicted a drastic reduction in hierarchical structures as a consequence of decentralisation, as knowledge, "sense"<sup>(5)</sup> and decision-making drifted towards the edge of the network.

Those strategists got one thing right: there is an ever increasing amount of data being generated, connected and "relationalised" into information, before being contextualised into knowledge, which needs to be assessed prior to decisions being taken. Indeed there are times when it seems that we are drowning in information and yet still people complain that they just don't know what's going on. Organisations are increasingly called upon to understand,

consolidate and communicate from within highly ambiguous, complex and dynamic conditions; and to do so in less time, with fewer resources and across a larger spectrum. Information systems enable data and information to be generated and connected at the "speed of light" but knowledge and wisdom only run effectively at the "speed of thought". Today's information environment is rank indifferent; it is instantaneous, unfiltered and omnipresent. If we are not to become immobilised under the pressure of all this information it requires that we all need to become much better at understanding and creating "sense"<sup>(5)</sup> in our organisations. Many corporations have chosen to deal with the prevailing challenges by creating an environment where all staff have the opportunity to participate in leadership. They have evolved into a transformational leadership setting and this evolution is reinforced and communicated through transformational language.

**Transformational leadership:** *"leader behaviours that transform and inspire followers to perform beyond expectations while transcending self-interest for the good of the organisation."*<sup>(6)</sup>





ILLUSTRATION GRY HEGE RINALDO

## THE EVOLUTION OF LEADERSHIP

Commercial leadership language has made the transition from an era influenced by "trait theory" – where leaders were seen as larger than life characters, strong, visible, charismatic personalities, through to "situational theories" – where leaders are able to flex to meet the demands of both the context and the followers and more recently by "interdependence leadership" – leading from a position of collaboration, curiosity and engagement.<sup>(7)</sup> Organisational language made the same journey.

Interestingly, industry has been highly effective at embracing organisational language from us. In their pursuit of a competitive advantage they use what works best. Their business language mimics the military; they refer to "winning the hearts and minds, getting off your high horse, closing ranks, marking time" and more recently I have heard commercial companies refer to "putting boots on the ground", a direct metaphorical translation from the war in Iraq. Their language is rich with military metaphor. Still, where appropriate, they have made significant divergences too. One of those diversions has been in the greater adoption of "transformational leadership" and its associated language.

## Transformational leadership and language

Transformational language engages, empowers, influences and inspires followers to higher levels of personal performance. Higher levels of individual performance leads inevitably to enhanced organisational capabilities, organisational learning<sup>(8)</sup> and growth. These descriptions reinforce the point of view that leadership, "engaging, empowering, influencing and inspiring", does not only relate to the formally nominated leaders in the organisation. Leadership is not necessarily based on rank or grade but is something that all staff have the capacity and permission to practice. "Leadership is not something few can be appointed to by other people, like being named manager. It is an inner decision to adopt a stance, an orientation toward the world."<sup>(9)</sup>

This should not be seen as a threat to those in authority; rather an enabler,

a decision support capability. It does not attempt to wrestle responsibility from those in senior managerial positions. Transformational leadership is a model that has the potential for all of us to help our organisation, and ourselves, learn.

If we really are the type of organisation which adopts an innovative and collaborative spirit that values the contributions of every single person, that supports our fellow colleagues whenever and wherever we can, that is inclusive by default and where we are accountable to create and sustain shared meaning, then the question becomes how might we communicate, as leaders, and what methods and language norms might be likely to prevail?

## The transformational power of questions

Questions are an invaluable leadership tool. Used mindfully they not only demonstrate value to the person you are

addressing; they also help us to remain open and curious rather than being critical and judgemental. Asking questions can make "not knowing" a virtue rather than what some might consider as a weakness. Once an organisation embraces questions as a "sense making"<sup>(6)</sup> tool, insights can emerge and insights are the catalysts for transformation. An organisational culture that can ask questions of its mission, aims, goals and processes strengthens both individual and organisational learning. It has the ability to improve organisational alignment, problem solving and decision making. It also enhances collaboration and teamwork. Questions help to empower staff by strengthening their own self-awareness and building self-confidence<sup>(10)</sup> so that they are better able to understand, decide and act in line with an organisation's goals rather than needing to wait to be told what to think, what to do.

During his command of the USS





**"Once an organisation embraces questions as a sense making tool, insights can emerge and insights are the catalysts for transformation."** Photograph by JWC PAO.

Benfold, at the time one of the most complex and advanced warship in the fleet, Commander D. Michael Abrashoff<sup>(11)</sup> helped shift the mind-set of the crew on board that led to a dramatic shift in performance. He took his vessel and crew from receiving one of the lowest performance assessments in its class, to one of the highest performing ships in the fleet. When asked how he did that, his response was "with questions, questions to everyone." He had conversations with every member of his crew and during these 15-20 minutes sessions he asked three simple questions: "What do you like best about this ship? What do you like least? What would you change if you could?" He listened carefully to their responses, he listened to understand, to see the responses as though looking through their eyes, and he then acted upon the sense he had made from the information and insights he received. A word of caution though, simply adding a question mark to the end of a sentence is not enough and "all too often it seems we ask questions that alienate and disempower rather than collaborate and empower our subordinates."<sup>(12)</sup>

At a senior decision briefing recently, a question formed in the mind of our Commander; he wanted to know if the analysis and recommendations were complete and consensual. Both of the sentences below are questions, but if you pay attention to the words used

— one closes minds, distances people and disempowers them, while the other empowers, includes and creates the potential for new possibilities.

- a) Who disagrees with this recommendation?
- b) Does anyone hold a different point of view?

One of these questions expresses our professional values of accountability, innovation, support and inclusivity, and the other does not. If you imagine these questions being asked perhaps you can start to differentiate the two. The option chosen generated a fresh discussion that led to outcomes that were not predictable. It was a transformational moment that came from the mindful delivery of a carefully crafted question. If questions are great vehicles for getting at what is already known but hidden or held back in our minds, there is another tool that allows us to access what is not currently known. It is a technique that enables intuition, insights and brand new connections to be made. That tool is telling stories.

### The creative influence of stories and metaphor

Stories and metaphors surround us all of our lives. They provide a framework for how we communicate and make sense of things

with ourselves and our world<sup>(9)</sup>. The "stories and symbols in organisations provide a barometer reading, showing the health of the organisation."<sup>(13)</sup> Stories are incredibly powerful because the learning is not so much in what is said in the story, but rather in what is not. The listener adds their own unique, personalised interpretation and makes it part of their own evolving story. The words that the leader uses are mere scaffolding and trigger a highly individualized creative process that takes place within the listener.

The Australian Army, in identifying an organisational imperative to "encourage flexibility and adaptability at all levels" introduced a methodology they refer to as "anecdotal circles"<sup>(13)</sup>. These anecdotal circles are unstructured sessions initiated through open questions where participants generate their own stories to illustrate an individual's perspective on their understanding of their workplace. As anecdotes are being shared, in one part of their mind, the listeners are hearing the speaker's story. In another part, the listeners are imagining a new story, one in which they have each become the protagonist.

These sessions were created in response to an increasing awareness that "the changing nature of warfare means that combat and support personnel make decisions that may have far reaching ramifications for the safety and welfare of personnel and civilians alike, as well as having far-reaching political implications beyond the success of the stated mission or tasks"<sup>(13)</sup>; a statement that is largely in line with the concept of the "strategic corporal"<sup>(3)</sup>.

To engage us at our most innovative and insightful, the stories we tell need to be offered lightly, able to drift, to wax and wane, so as to leave room for personal interpretation. Transformational leadership language is not about transmitting an increasing amount of information, removing any doubt or ambivalence. It is about leaving enough space so that the listeners themselves can generate the insights and imagine new possibilities — "the leader says less: the listeners understand more."<sup>(12)</sup>

One might consider the Joint Warfare Centre (JWC) as a highly effective story telling machine. Through our scenarios and simulations we give our audiences enough information to make their own



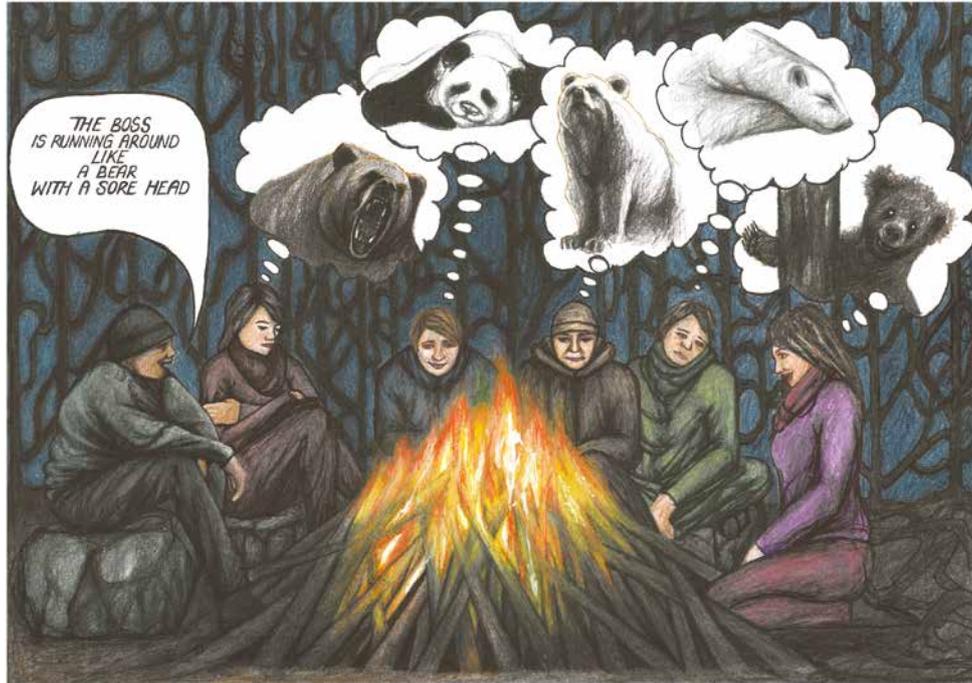


ILLUSTRATION GRY HEGE RINALDO

interpretations, and play out their actions in a safe and benign environment. We leave the audience with the ability to use that story, develop and refine it, internalise the lessons learned, their insights and discoveries, in a completely different context in the future.

When JWC ran STEADFAST JUNO in 2010, no one was predicting the events that would unfold in Libya just months later and it was certainly not the scenario that was used. Nonetheless, Lieutenant General Charles Bouchard claimed that the staff that had been through this JWC exercise were "light years ahead of those that had not." In other words we had created the environment for "organisational learning"<sup>(8)</sup>, where knowledge can be reused, reshaped and reapplied in new contexts. That is transformational leadership in action and it started with a story that was crafted and then delivered by the staff of the JWC.

"In the future, leaders will not only have to be effective strategists, but rhetoricians who can energize through the words they choose"<sup>(9)</sup>, but is this really new to us in our military context? I don't think so; a swift internet search on inspirational speeches will flag up a disproportionately high set of results that have military origins. Perhaps the difference is that highly effective transformational leaders ask questions and tell stories purposefully, they do so in line

with the Commander's intent and in order to get the mission done.

### Saying lots by saying nothing at all

To communicate in ways that engage and inspire does not always involve words. When you say nothing at all, you are still communicating. Indeed, NATO has a formal decision-making process based around the use of silence. Silence, when used mindfully, is a liberating and empowering tool. It creates space for thought and reflection and encourages others to fill the gap with their world view<sup>(14)</sup> and it is probably the simplest of all transformational leadership language skills to try out. Next time you are in a discussion where a decision needs to be made but you are not sure if you have all the factors before you, just leave a five second gap between when you would normally speak and when you now choose to do so. You still get your turn, and you might be surprised with whom else, or what else, fills this seemingly uncomfortable gap.

Another strange phenomenon is that the most effective way to lead transformational behaviours is not through the mindful selection of what you say; the stories you tell or the questions you pose. It is about what you choose to do, day in day out. What actions and behaviours do you exhibit that might encourage transformation

in others and consequently in our organisation. Conversely, what do you choose to turn a blind eye to, what do you encourage by allowing it to happen or by exemplifying it yourself. Leaders throughout the organisation are under 24/7 surveillance and scrutiny; followers are constantly gathering cues, consciously or otherwise, on what leadership behaviour actually looks like. Moreover a leader's shadow is cast even when they are gone; they leave an indelible mark on an organisation.

### Five tips for enhancing your transformational leadership language

**1. Ask even more questions of yourself than you ask of others.** No matter how certain you feel about your point of view, intentionally coach yourself by asking "what else is there in this situation I may not be seeing yet?" Seek out those with different perspectives. Know that all you have is a point of view, and that is all anyone else has too. The language of leadership is about synthesising these points of view.

**2. Consider carefully the stories you tell/hear.** Do the stories you tell encourage the recipients to make their own connections, create their own conclusions and enable new possibilities to emerge? Are you



willing to discourage negative, demotivating or disempowering stories? Are the organisational stories enablers for the JWC's Vision, our Commander's intent, our purpose and goals?

**3. Restrain your natural tendency to judge.** Hold strong convictions and steadfast beliefs but do so lightly enough so that you can let them develop and evolve or even give away altogether. Be ready to believe and accept without judgement that the person you are leading is doing what makes perfect sense to them, given their interpretation of the information and context. Use silence as a tool to find out even more.

**4. What shadow are you casting?** How big is the gap between what you say and what you do? How could others interpret your behaviours? Are you ready to step in and challenge behaviours that are not in line with our commitments to each other and our organisation? When do you step in and say "that's not how we do it around here"?

**5. Be courageous enough to be vulnerable.** See the value in expressing emotion and displaying a little humility. Be ready to admit when you get it wrong — by "setting aside the pretences of invulnerability and omniscience" leaders invite their peers and subordinates to trust<sup>(6)</sup>. Trust is perhaps the most important characteristic in a "leaderful" organisation<sup>(2)</sup>.

## Conclusion

In today's highly networked interconnected world where information is news long before it ever gets made sense of, with a world waiting for instantaneous reactions before decision makers have the chance to bring their wisdom to bear, it may become an operational imperative to enable leadership throughout our organisations. Intent, mission and purpose need to be understood at all levels. We simply don't have the luxury to burden the "chain of command" with the sole responsibility to make sense of the environment and then expect them to disseminate their sense link by link.

*"With the growing complexity and speed of change in the world, the traditional hierarchical model of leadership that worked*

*yesterday will not work tomorrow. The leader simply won't know enough to adequately tell people what to do; the world is changing too rapidly. No one person can master all the data needed to address the complex issues that confront today's organisations,"<sup>(12)</sup> ...but lots of people can. The question then is how to get all the people "that can" to the table, and how to engage and inspire them to bring their best game with them.*

In a transformational setting *"an effective leader's persuasion is of the subtlest kind, for he or she must interpret reality to offer images of the future that are irresistibly meaningful. In the choice of words, values, and beliefs, leaders craft reality to ensure commitment and confidence in the mission."*<sup>(12)</sup> Yet there are also times when clear no-nonsense leadership is required, where the more transactional leadership approach influenced by command and control is not just appropriate, it is critical.

**A TRANSFORMATIONAL LEADER** requires versatility and an intuitive ability to flex his/her style according to the desired outcomes. Engaging in duality of this kind is a challenge. Most of us have been brought up on a healthy dose of unity of command and operational stovepipes and these are highly effective paradigms, except when they get in the way. To have the ability to shift your language from issuing clear expectations to a language which leaves enough room for your staff's own personal and organisational insights requires courage and commitment.

Developing our transformational language of leadership may require deep personal change. It may demand introspection into our own beliefs and values. It involves *"thinking through what we are attempting, exhibiting more than a little humility, and being able to level with others and speak from a genuine point of view. It involves acquiring a new perspective on the world, a profound clarification of what it means to be leader."*<sup>(9)</sup> I am not proposing that our reliance on a transactional style of leadership is lacking in relevance, but, if a hammer is the only tool we have in our toolbox, well everything starts to look like... oh you know what I mean. ✦



**A transformational leader requires versatility and an intuitive ability to flex his/her style according to the desired outcomes."**

## END NOTES:

- (1) Fox, W. L., (2011) "Six Essential Elements of Leadership: Marine Corps Wisdom from a Medal of Honor Recipient".
- (2) Raelin, J.A. (2003) "Creating Leaderful Organisations: How to Bring Out Leadership in Everyone".
- (3) Krulak, C.C. (1999) "The Strategic Corporal: Leadership in the Three Block War".
- (4) Alberts, D. S., Garstka, J. J., Hayes, R. E., & Signori, D. A. (2001). "Understanding Information Age Warfare".
- (5) Weick, K.E., (2001) "Making Sense of the Organisation".
- (6) Avolio, B. J., Walumbwa, F.O., and Weber, T.J. "Leadership: Current Theories, Research, and Future Directions".
- (7) Schein, E. H. (2010) "Organisational Culture and Leadership".
- (8) Senge, P. (1990) "The Fifth Discipline: The Art and Practice of The Learning Organisation".
- (9) Denning, S. (2007) "The Secret Language of Leadership".
- (10) Marquardt, M. (2005) "Leading with Questions: How Leaders Find the Right Solutions by Knowing What to Ask".
- (11) Abrashoff, D. M., (2007) "It's Your Ship: Management Techniques from the Best Damn Ship in the Navy".
- (12) Conger, J.A., (1991) "Inspiring Others: The Language of Leadership".
- (13) Fidock, J., O'Toole, P., & Talbot, S. (2008) "Anecdotally Speaking".
- (14) Kline, N., (1999) "Time to Think: Listening to Ignite the Human Mind".

<SPOTLIGHT> WHO WE ARE

# Professional VALUES



TOGETHER, AS NATO PROFESSIONALS OF THE JOINT WARFARE CENTRE, WE ARE:  
**ONE TEAM. TRAINING NATO. TRANSFORMING WARFARE. SECURING THE ALLIANCE.**

**I AM A NATO PROFESSIONAL.** I represent an Alliance dedicated to safeguarding the freedom and security of its Member Nations. As such, I will maintain a strong sense of pride, duty and service. I will work hard to ensure that the job is done right and I will remain loyal to my colleagues, to the Joint Warfare Centre and to NATO. I will show up to work every day, ready to bring my best game to the table and embrace the following professional values that guide my daily interactions:

**Innovative.** As a NATO professional I will adopt an innovative and collaborative spirit that values the contributions of every single person. I will invite new ideas and listen from a position of curiosity and appreciation in order to truly understand. I will strive to learn from experience whilst at the same time being aware of my filters and blind spots. I will engage as a "Participant-Supporter-Coach" so that we can grow as individuals and as an organisation.

**Supportive.** As a NATO professional I will support my fellow colleagues whenever and wherever I can. I will assume positive intention in others while actively supporting and developing others. I will "be here now" for others as a default setting and I will ask for and offer appreciative and constructive

feedback and coaching. I will be honest and respectful with my assessments, curious about my own development and use these moments to better our team and myself.

**Inclusive.** As a NATO professional I will respect and embrace our differences. I will listen for understanding and ensure that we value the contributions of everyone. I will actively seek out and share information and best practices. There are no "back benchers" in JWC — our team is a dazzling, dynamic blend of Nations, regional cultures, civilian and military service perspectives. Therefore, I will take the time to include and appreciate the work done in areas other than my own.

**Accountable.** As a NATO professional I will hold myself accountable and I will serve unselfishly in peace so that others may succeed in war. I will take time to create a shared meaning and will ask, "what else can I do?" to support the effort. I will ensure that I know what our priorities are and help to focus on our "blue chips" and to the critical paths that are under our control and influence. I will be mindful of my own moods, manage my own energy levels and be mindful of the shadow I cast, and I will create opportunities for those I work with to be equally accountable for our shared co-created success.



JWC One Team Logo (above) by Brandon Chhoeun

# JWC's "ONE TEAM" CULTURE

By Boris Diekmann  
Vice President  
Senn Delaney

**All organisations have cultures.** The only choice we have is whether we shape them or we let them shape us. Culture plays one of the biggest roles in the success or failure of all strategies and initiatives and in organisational spirit and performance. The Joint Warfare Centre (JWC) leadership team has embarked on a journey of intentionally shaping a healthier, high-performing culture to become even more effective in serving NATO. JWC calls it the "One Team" culture. Learn more about its insights and how aligning organisational culture with strategy and structure can boost performance of individuals and teams, and help fulfill its mission.

## Why culture matters to JWC: "Culture eats strategy for breakfast"

All organisations, from military and government to private institutions and corporations, have cultures. Cultures are made up

of historic habits, behaviours and engrained thinking, *e.g.* around how we make decisions, how openly we speak and listen, how we work in teams. The culture this creates determines much more than anything else the results we get. While often well intentioned, some of those habits get in the way, especially when strategic, operational changes or stretch goals need to be achieved. Leaders must choose whether to shape their cultures in a meaningful way that enables success, or to simply allow the culture to shape their organisation, for better or worse. JWC took the proactive approach.

## The start: Knowing and acknowledging where we are

Like any professional or personal endeavour, before we go anywhere, we need to know where we are and where we want to go. So, in January 2013, the JWC invited every employee for the first time to partici-

pate in a unique culture survey that would help to understand more clearly the current strengths and challenges of its organisational culture. The survey was done in partnership with Senn Delaney, a recognised leader in the field of culture shaping.

The senior team, at the time led by Major General Jean-Fred Berger and Chief of Staff Brigadier General John W. Doucette, was grateful for the high response rate as well as the quality, balance, honesty and thoughtfulness of the feedback received from the survey. It provided a clear and thorough starting point for an ongoing journey that some have described as being one of the most valuable, rewarding and meaningful ones of their careers.

## Overcoming the "Jaws of Culture"

The culture survey told a compelling story of the JWC culture. JWC has a strong culture characterised by a strong sense of pride



**Left and middle:** Nearly the entire JWC staff has attended cultural-shaping sessions. **Right:** JWC Human Resources and Public Affairs Office teams with Mr. Diekmann. Photographs by JWC PAO.



# ONE TEAM CULTURE

for the difference JWC makes, exceptional commitment and care for its mission, unmatched expertise in its field, and mutual support within teams, especially in times of urgency. This culture was getting JWC, and hence NATO, good results.

However, the leadership also realised how much energy, experience, ideas and agility get lost through some of the habits and beliefs that determine the daily experience, interactions and choices of people. At JWC, these cultural barriers are now often referred to as the "Jaws of Culture." Dysfunctional organisational habits, such as silo mentality, bureaucracy and resistance to change, act like jaws in the culture that can chew up your strategies and initiatives, or as the saying goes, "eat strategy for breakfast". The JWC leadership understood that the JWC culture could become a strategic advantage, helping to bring out the best in individuals and teams; or at worst, the "Jaws of Culture" would be a significant drag on JWC's efficiency and effectiveness.

## The journey begins: culture-shaping sessions clarify the way forward

During a very engaging two-day off-site culture-shaping session, the JWC leadership team started clarifying and aligning around:

- the connection of its culture with strategic and operational needs;

## WHY CULTURE MATTERS?

Highlights from a 2013 "global culture and change management survey" confirm that whilst culture is critical to success, intentionally leading it is underutilized in organisations:

- **86%** of executive-level respondents believe that their organisation's culture is critical to business success.
- **60%** said culture is more important than the company's strategy or operating model.
- **96%** said some form of culture change is needed within their organisation.
- **51%** believe their organisation is in need of a major culture overhaul.
- **45%** do not think their culture is being effectively managed.
- At **57%**, skepticism due to past failed efforts was the number one reason for resistance to change.
- **70%** of those respondents whose changes were adopted and sustained leveraged organisational pride and emotional commitment.

Source: Strategy& <http://www.strategyand.pwc.com>

- the key cultural traits that would support and hinder future success;
- what it would require from them personally, as a leadership team, and for the organisation to successfully and sustainably shape a JWC culture.

Since then, being intentional about shaping the "One Team" JWC culture has become a

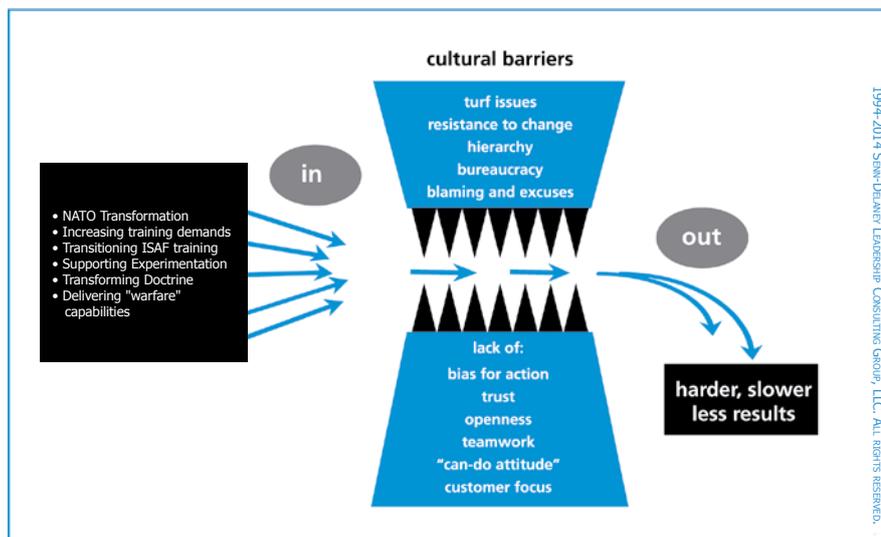
strategic priority and a rewarding path for everyone involved. The JWC leadership is convinced that creating and leading a thriving, high-performance culture aligned with its purpose and mission is a critical factor in effective execution of the strategy. It is a vital strategy for success in itself. Among the many demonstrated benefits that translate into measurable, sustainable, improved performance, here are the most important ones for JWC:

**A more innovative organisation:** New missions and exercises will require new ideas and approaches, implementing more change faster, as well as ongoing learning and best practice-sharing across the organisation.

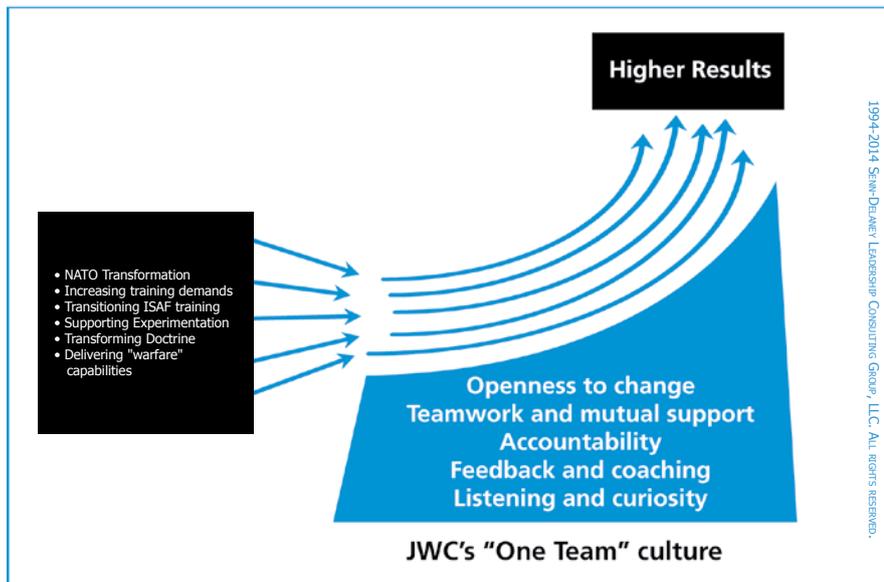
**Consider this:** As you read this, think about your own organisation, and ask yourself the 10 percent question: What if you had a culture that would help you and others save 10 percent of your time on implementing change?

**Working more as "One Team":** Designing high-quality and complex exercises, as well as flawless execution, quality and agility require excellent team work — particularly across Divisions and hierarchies. As with most other NATO bodies, building teams needs to happen despite challenges of high

## JAWS OF CULTURE



## CULTURE AS A LAUNCHING PAD



turnover, different military, civil, professional or national backgrounds and leadership styles, relatively little influence on recruitment, limited traditional positional power, fixed staff size, increasing workload and challenging time constraints.

**Consider this:** Reflect about your own organisation. What if it took 10 percent less time to fully integrate new staff members into teams? What if you and others could spend 10 percent less time on issues related to silos or bureaucracy? What if 10 percent more often you could take decisions, which create the best outcomes for the larger organisation and everyone was committed to them?

**Individuals at their best:** Last but not least, to fulfil its mission, JWC would like to attract great talent from inside and outside of NATO. The leadership believes that to drive innovation and great teamwork, every person needs to feel valued, thrive, and see his or her time at JWC as a career pinnacle.

**Consider this:** What value would it bring to your own organisation if people could be at their personal best even more often? What if everyone felt he or she had 10 percent more energy or had 10 percent more ideas to contribute? What if the organisation could move 10 percent faster through increased focus, fewer disruptions, high levels of curiosity and listening, and supportive and genuine feedback?

### A culture-shaping roadmap: a systematic "battle plan"

It is because of this strategic value and relevance of JWC's and hence NATO's success that the current Commander, Major General Erhard Buehler, together with Brigadier General Doucette, decided to engage the entire organisation in a thorough, systemic and ongoing culture-shaping process.

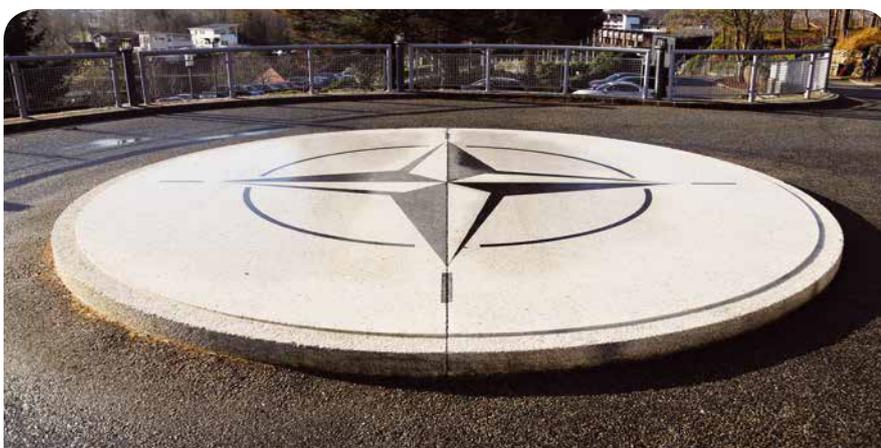
Shaping a culture is a journey, not an event. For the JWC leadership team, shaping the "One Team" culture is an ongoing commitment to pay equal attention to strategy,

structure and culture. The process requires an integrated approach that must begin at the top and be embedded throughout the entire organisation. Most leaders who try to shape the culture on their own do not succeed. However, if done correctly, shaping a culture can be a very successful, positive, rewarding and stimulating process.

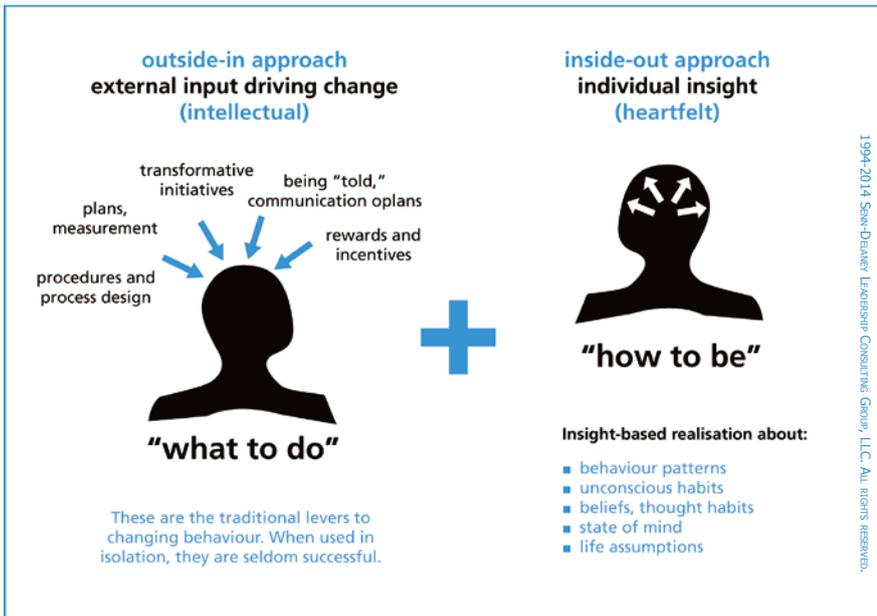
Committed to the success of this journey, the leadership team chose to partner with a global leader in the field of culture shaping, Senn Delaney, to leverage from its decades of hands-on experience and a proven methodology in shaping cultures, and a process to enable JWC to continue the transformation on its own. JWC follows a comprehensive system of change, with an awareness of and a focus on the following principles that Senn Delaney has determined are required elements of successful culture shaping:

- purposeful leadership
- personal change
- broad engagement with energy, momentum and mass
- focused sustainability

**Purposeful leadership:** Culture shaping is a leader-led process. Research shows that starting at the top is critical because organisations tend to become "shadows of their leaders". JWC started with nurturing even a more mutually supportive, high-performance team at the top that would model the desired culture. Team members learned about what it takes to shape a healthy, high-performance culture and their role in it. Based on this growing understanding, they created a systematic execution plan to support the process, like any other strategy. Through the process, the team was able to create more clarity around the purpose and reason for shaping the culture, and what is in it for JWC. Based on this perspective, as well as input from the initial culture survey, feedback from early culture-shaping off-site sessions, and their own experiences, they started to explicitly define JWC's "One Team" values, behaviours and mindsets that would need to become a way of life and they began to get aligned around them.



## EFFECTIVE BEHAVIOUR CHANGE



A "Culture Leadership Team", led by Major General Buehler, meets regularly to oversee the progress of a culture-shaping roadmap.

**Personal change:** Culture is the sum of all individual choices people make every day. Therefore, shaping a culture really starts at a personal level. Since people can only change behaviours that they are aware of and willing to change because it makes sense to them to do so, this requires an insight-based approach. It is only when "people do it for themselves" that shaping a culture is effective and sustained. Starting with the top team, people at JWC started their personal journeys with two-day off-site sessions that provided the environment needed for personal insights to flow. Where possible, this was done in natural work teams and led by senior leaders of these teams. Leaders and participants at all levels often reported that after some initial skepticism, they found these workshops to be one of the most valuable and rewarding experiences of their career.

**Momentum with energy and mass:** Cultures often resist what they need. Hence, momentum, energy and critical mass are needed to engage all employees. The faster people are engaged in the process, the more likely the culture is to shift. For example,

at JWC, after a few months, almost every individual had attended a culture-shaping off-site session, even during such major exercises as STEADFAST JAZZ. To obtain momentum and build internal competence for the future, JWC used Senn Delaney's transfer of competence process to train five leaders to carry out the culture-shaping sessions going forward. These JWC culture-shaping facilitators will help engage new joiners to live the JWC culture, as part of the on-boarding process.

**Focused sustainability:** For the "One Team" culture to become a new way of life, systematic reinforcement is needed at the individual, team and the organisation levels. These are a few examples. At JWC, more than 20 culture coaches have started supporting their respective teams through simple, short, and very regular conversations as well as feedback and coaching to link the healthy high-performance mindsets to their daily work. In addition, every team at JWC will attend a one-day follow-up workshop. This helps reinforce and expand on insights from the initial culture-shaping session, and provide ways to apply their learning to relevant team goals and issues, and create mutual support and commitment on how the team will live the JWC values.

JWC has also started looking at institutional practices to ensure they drive as much as possible toward the desired culture — including, but not limited to: communication, training, and Human Resources (HR) practices. Regular measurement of the impact of the culture initiatives and follow-up culture surveys will provide precious, timely feedback to leaders to ensure they remain on track. A survey conducted before any reinforcement activities began has already determined that 67 percent of respondents "believe the culture-shaping process can help to make JWC even more successful and get better results." The best is yet to come... ✦

If you would like to learn more about JWC's culture-shaping efforts, please contact Mr. Garry Hargreaves at: [garry.hargreaves@jwc.nato.int](mailto:garry.hargreaves@jwc.nato.int) or Mr. Paul Sewell at: [paul.sewell@jwc.nato.int](mailto:paul.sewell@jwc.nato.int)



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**Founded in 1978,** Senn Delaney was the first firm in the world to focus exclusively on transforming cultures. Many Fortune 500 and Global 1000 CEOs have chosen Senn Delaney as their trusted partner to guide their cultural transformation. Senn Delaney, a Heidrick & Struggles company, has worked in 40 countries, helping leaders to shape thriving organisations' cultures to measurably impact both the spirit and performance of their organisations. For more information about Senn Delaney, please visit: [www.senndelaney.com](http://www.senndelaney.com)

## HOW JWC FOSTERS CULTURE

# Culture-shaping facilitators share their views



"We'll solve the conflict with a water pistol fight."



**MR. KJETIL SAND** I believe two of the key words in this process are awareness and action. By becoming more aware of our culture at the JWC, we can give ourselves the opportunity to shape it the way we would like; creating a working environment which allows people to grow. As a result of the culture-shaping programme, I have become a facilitator. That has been the main impact for me. But it has also really triggered me to consider how I interact with other people, in what areas I can improve and, most importantly, how I can achieve this. Creating a culture of excellence does not happen overnight. It will require our entire organisation to make a real effort over time. I am convinced that the reward will be a genuine team spirit, with people who look forward to their next day at work for JWC.



**LIEUTENANT COLONEL FRANK L. ANDREWS**

The culture-shaping programme can certainly help us communicate more effectively with each other. Since almost everyone in JWC has attended

a workshop, we now have a shared experience and some words and phrases that everyone immediately understands and can relate to. The one thing that really struck me is that I am now more aware of my thoughts, feelings and moods. Many times we are not mindful of what we are thinking, what mood we are in, or how we feel. We may not realise it, but this affects how we show up at work, how we interact with others, and what decisions we make. Many of the concepts can have a tremendous impact on our personal lives as well, by making us better listeners, or letting our family members know how much we appreciate them. Recently, we have begun the "in-use" sessions for the teams. The cultural coaches have been doing a great job helping us to apply these ideas and concepts into our day-to-day business. As a facilitator, it has been rewarding to see people using these concepts after the workshops. We will definitely keep working on culture until it becomes a habit and we live our values each day. The culture coaches are vital as they keep reminding us about the concepts. Also, the "in-use" workshops are a great way for a team to spend a day talking about how they work together and operate, as well as being more aware of their priorities. It will be a challenge to keep this culture alive throughout the summer turnover and the busy exercise schedule we have next year.



**MS. HILDEGUNN SIVERTSEN** I think "One Team" values will give us a common focus and goal to work towards. We all bring different views and interpretations of the values to the organisation, just as we may emphasize on different aspects of these values. But the fact that we can align on that main direction will be valuable for us when working as "One Team". One of my biggest takeaways is "teamwork". I work in Joint Exercise Division, but a lot of my day-to-day work is with BUDFIN. Having participated in unfreezing sessions with both my Division and BUDFIN, I have been able to have conversations with both of them on how we can work better to-

gether. I don't think these conversations would have been as open had it not been for the culture-shaping programme.





**JWC is the first military organisation in NATO to receive this content."**



**MR. DAVID NAUTA** Especially, the concepts of "Be Here Now" and "Listening Levels" have impacted the way I spend my time with colleagues and my family. Now, I enjoy talking and discussing with others more than before, as I stay more focused during any conversation, without feeling the need to multi-task all the time. I have also observed my colleagues applying concepts from the culture-shaping programme, with positive effect. Although it is still a bit early to see the effects, people generally seem willing to embrace the concepts. In order for an organisation to shape a culture of excellence, the staff must be able to enjoy what they are doing. Having a culture that nurtures that feeling will create excellence. I am pretty excited to see our culture coaches involved and motivated to make all this work.

**MR. PAUL SEWELL** What I like about the programme is that these principles do not all have to be accepted as one package. You can try each of them out and see how they fit with you. I identified with some of them more quickly than with others, but found that those I did not "get" at the start are now beginning to make more of an impression on me. Also, I realised that this programme is not just for work, but for all my relationships. For example, "Be Here Now" is a great reminder with my kids. Also important to note is that we have done some good work in culture-shaping at JWC. We have delivered the unfreezing sessions to about 85 percent of the staff so far, with the plan to have most "unfrozen" by June. Some effects have already been seen. The fact

that these concepts are entering our daily conversations across JWC is a great start with discussions of our "Blue Chips" in meetings and the desk reminders to "Be Here Now". We have to remember that we are the first military organisation in NATO to receive this content and so it is up to us to make the most of it, considering the staff gave 37 pages of survey comments about how to improve. I think this is a unique opportunity; we now need to make sure we all try and integrate the concepts in our daily working lives.



**In order for an organisation to shape a culture of excellence, the staff must be able to enjoy what they are doing. Having a culture that nurtures that feeling will create excellence."**



# JWC's Cultural Concepts

EXPLORING THE MINDSETS OF A HEALTHY,  
HIGH-PERFORMING ORGANISATION

# 1.

be  
here  
now

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By Paul Sewell

Lessons Learned Analyst;  
Lead Facilitator for Organisational  
Cultural Change Programme  
Joint Warfare Centre

here now". You are in a meeting but are perhaps thinking about the next meeting you have to attend. Or someone comes to your desk and you are still typing as you answer them. Or perhaps you are with your children but thinking about what you need to do for a project at work. In each of these cases, our attention and ability to be present are severely degraded. Not only is our ability then reduced, but it is often visible in those around us; it casts a powerful shadow. Simply put, if our attention is diluted or scattered then we become less effective, but also less aware of those small things in the situation that may become big issues later on. If we can practice to be here now more often for ourselves and those around us, then we are more engaged in the task we are currently dealing with and can respond more authentically and appropriately. This not only applies to our tasks, but our human interactions one-on-one or in meetings.

So, how do we improve our ability to be here now? There are many ways to do this such as looking after ourselves with good exercise, nutrition and rest. However, the simple fact of reminding yourself to pay attention to what you are paying attention to can be the simplest of first steps. ✦

## Ideas for implementing the concept of Be Here Now:

- Identify the areas in your life where you could be more present.
- In meetings, remind each other the value of being here now to focus our best efforts on the products of the meeting.
- At home, try to give your full attention to a loved one or spouse.

**THE OPTIMISATION OF** resources has always been important in the military – being able to direct the appropriate resources at the right time to the right place is paramount. Yet, when we think about resources, we often refer to tangible items such as equipment, supplies, and even how we use our own people. How often though do we think about the appropriate management of our own individual, *internal* resources? These include our thinking styles, beliefs, moods, mental focus, our perspectives, and even our own presence. Each influences how we "show up" on a daily basis. They are the

filters through which we see the world. Just like our external resources, if our internal resources are unclear, unused and poorly maintained, then how can we expect to be productive when we try to use them?

One of the most important of these inner resources is our own attention. That is, our *capacity to maintain selective or sustained concentration*. Our ability to focus this attention on the present task, in the present moment may be one of the most powerful tools we have. That is our ability to *Be Here Now*.

Think for a moment about how ineffective we might be when we are not "being

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