The Hague Centre
for Strategic Studies

# HCSS-NATO HQ SACT Symposium Report

## Rethinking Fire and Manoeuvre across the physical and non-physical aspects of domains

**Davis Ellison and Tim Sweijs**

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On 27 September 2023, HCSS, in partnership with NATO Headquarters Supreme Allied Command Transformation (HQ SACT), held a day-long symposium in The Hague to discuss the topic "rethinking fire and manoeuvre across physical and non-physical aspects of domains." This conference report offers a consolidated review of the discussions held during the seminar. Responsibility for the content rests with the authors and the authors alone. This report does not reflect the opinions of NATO, HQ SACT or any of its affiliates nor is the content necessarily endorsed by senior leadership or the chain of command.

# Table of Contents

# 1. Introduction

Russia's attack against Ukraine in February 2022 had military specialists and defence planners from across NATO looking at their maps and revisiting their concepts. The gnawing questions after nearly two years of war are: "Would our plans work against a large scale, multi-front attack? Could our forces survive? Could NATO sustain the fight for an extended period of time?"

Outside engaging in war, there is no better way to learn about warfare than to study it in the real world

Outside engaging in war, there is no better way to learn about warfare than to study it in the real world. As such, the ongoing war offers plenty of insights about the contemporary conduct of interstate war. However, the lessons that defence organisations can learn from it for future wars, in terms of the defence capabilities they buy, the warfighting concepts they use, and the organisations forms they choose, is matter of debate.

Regardless, the war exposes one fundamental truth: War, also interstate war, is here to stay. We may condemn political leaders for behaving in the 21st century as if it is the 19th century but that will not stop them from doing so. Even if Ukraine manages to push out Russian forces – which seems very unlikely – a march on Moscow is neither feasible nor desirable. NATO will therefore face a revanchist and revisionist Russian for the foreseeable future.

Russia aside, NATO faces an array of challenges. Sino-American competition is surging, and over the past few years is trending towards conflict, while widespread support in Washington DC to strategically reorient to the Indo-Pacific, is likely to put a strain on allied cohesion and leave Europeans to fend for themselves in the years to come. Persistent instability festers in the ring of countries surrounding Europe with intrastate and internationalised state conflicts wracking the fabric of societies. The democratisation of the means of violence and the proliferation of weapons that can strike with greater precision, speed, and impact over longer distances to non-major powers. And the slow maturation of so-called Emerging and Disruptive Technologies (EDT) that are entering the capability portfolios of armed forces, and that can be expected to shape the ways in which wars are fought over the next one and a half decade in wartime , and the ways in which the battlefield is shaped, in peacetime.

Most if not all military innovation specialists agree that adaptation does not happen overnight. The adoption of new technologies requires the development, testing and implementation of new operational concepts to use these technologies and the adjustment of force and organisational structures. Military change is evolutionary rather than revolutionary, it requires vision and comes in incremental steps, which requires hard work and painstaking attention to detail.

Military organisations typically make use of warfighting concepts to set the vision and steer military adaptation and transformation processes. A warfighting concept provides a framework for how a military force intends to conduct warfare and achieve its objectives by outlining principles, strategies, operations concepts and tactics. Such warfighting concepts shape our views of past, present and future war.[1] Concepts such as Flexible Response, AirLand Battle, counter-insurgency (COIN), and hybrid war pinpoint problems and outline solutions to take

1 Davis Ellison and Tim Sweijs, "Breaking Patterns: Multi-Domain Operations and Contemporary Warfare," *The Hague Centre for Strategic Studies*, 25 September 2023, https://hcss.nl/report/breaking-patterns-multi-domain-operations-and-contemporary-warfare/, pg. 1.

on challenges. Today, the term multi-domain operations (MDO) dominates defence planning discourses across the Alliance. MDO, at its most basic level, refers to the combination and coordination of effects across military and sometimes non-military domains. Defence organisations highlight how C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) technologies augur in a new way of warfighting – one that features orchestrated fires across different domains and lightning manoeuvre, facilitated by integrated command and control structures.

How defence organisations talk about warfare in these concepts, in a very literal sense, has strong effects on shaping expectations and the realities of new ideas in military affairs. Buzzwords, defined as terms used more to impress than to inform, especially when a technical or jargon term, are often derided as attempts to dazzle with style rather than substance. There is certainly some merit to this, and it becomes a stickier problem in a multinational organisation like NATO where thirty one allies have to find common meaning.

Buzzwords, if used effectively, can achieve important effects

Buzzwords, if used effectively, can achieve important effects though. They can offer shared meaning, as NATO terminology standardisation does, help cut through bureaucratic red tape, and create a foundation for debate based on a commonly understood framework. The trick is not to overstretch a term, such that it becomes meaningless in effect, or to conflate agreement on terminology with developments in substance. They are a tool, one that can help or hinder in the wrong hands.

On 27 September 2023, HCSS, in partnership with NATO Headquarters Supreme Allied Command Transformation (HQ SACT), held a day-long symposium in The Hague to discuss the topic "rethinking fire and manoeuvre across physical and non-physical aspects of domains." The event was held in relation to HQ SACT preparations for the January 2024 NATO Military Committee Chiefs of Defence session to be held on the same topic. The speakers invited were senior academics, researchers, and defence officials from across Europe and North America who shared perspectives across three core themes: Warfighting, Technology, and Command.

The problem statement shaping the discussion of this event was: *Refining the path for the Alliance to operationalise its approach to multi-domain operations*. Each panel centred around how NATO might adapt its way of warfighting for the coming era and considered how NATO can better operate across all five warfighting domains, command and control armed forces, coordinate with non-military actors, and leverage new technologies.

This conference report offers a consolidated review of the discussions held during the seminar. It is divided into five sections:

- The first section, based on the opening discussions, provides an overview of the debates held on the future of warfare, and what contemporary conflict has revealed as weaknesses within NATO's approach.
- The second, third, and fourth sections detail the respective panel discussions on (1) Warfighting across Shaping, Contesting and Fighting; (2) Technology and the Changing Fight; and (3) The Future of Command in NATO.
- The fifth section concludes the report; it identifies core dilemmas and outlines a set of recommendations for NATO and NATO members.

# 2. The Future of Warfare and its Impact on Fire and Manoeuvre

What would we be talking about if Russia had not attacked Ukraine?

## To learn, or not to learn, from the present

What would we be talking about if Russia had not attacked Ukraine? This thought-experiment, put forward at the outset of the symposium, was a stark reminder of the military challenges faced by NATO and its allied forces in recent years. For European forces in particular, operations in Afghanistan, Iraq, Libya, and the Sahel, already exposed considerable capability shortfalls and a lack of intellectual preparedness to deal with the challenges of contemporary conflict.

Russia's war of aggression augured in a European *Zeitenwende*, driving home the need for European armed forces to also prepare for high intensity conventional warfare against a nuclear armed opponent. It is now time to re-learn old lessons while incorporating new ones. Battlefield manoeuvres, especially on land, the sea, and in the air have not been conducted at scale in most European states in decades. Coordinating fires across the different echelons of war have not been practiced. Fundamental questions of defence of the Euro-Atlantic Area *at the theatre-level* are now at the front of the minds of planners and strategists. Rethinking fire and manoeuvre is as much about *remembering* fire and manoeuvre at theatre-level as it is about rethinking them as the character of warfare evolves.

What should we be taking from the observations of the current war between Russia and Ukraine? For one, Western ways of warfighting that assumed attrition is a choice, rather than an immutable part of warfare, and that it is in opposition to manoeuvre, have not been validated by the current war. Manoeuvre warfare, such as it has been conceptualised by NATO planners since the 1970s, hit a high-water mark of effectiveness two decades ago with the US invasion of Iraq.

The current war, however, has grinded down into a war of attrition along a very long line of contact. In various stages of the war, both parties employed manoeuvre, albeit with mixed success. Russia's offensive manoeuvres failed miserably during the initial stages of the war. Ukraine has from time-to-time employed successful manoeuvre coupled with deception to shape the battlefield, including during the successful 2022 counteroffensive in which Kharkiv was retaken. But overall, as the war evolved into a stalemate, it became clear that manoeuvre does not provide a silver bullet and has not helped the Ukrainians to overcome defensive lines. The vital element has been sufficient capacity in fires to sustain longer campaigns and attrit

enemy forces. This importance of fires has led to races in arms production and mobilisation to rush munitions and capabilities to the front. For NATO, this is food-for-thought because a defence-in-depth concept, such as both Russia and Ukraine have utilised at different times, is far less feasible in smaller, frontline European states that cannot afford to trade space for time. This opens the door for considerations of fires into adversaries' territory to degrade the ability to manoeuvre at scale by furnishing NATO with an anti-access area denial (A2/AD) capability of its own.

## Combat competence is crucial

Basic competence in soldiering remains at the heart of combat effectiveness which includes employing fires, conducting manoeuvres, and commanding forces in the field. Questions have been raised amongst European forces, however, about just how competent the armed forces are when it comes to the application of combined arms manoeuvre at higher levels, such as brigade and division-level operations design. After years of cuts in training and exercises, these questions are valid ones. The abysmal performance of many Russian battalion tactical groups during the Kyiv offensive in the first months of the 2022 invasion serve as a strong reminder of the negative outcomes this can lead to.

War, at its fundamental level, is about the violent use of weapons in combat

The value of realistic, tough training and rigorous exercising in order to build the 'muscle memory' of the armed forces is crucial to prevail in contemporary conflict. Though no other activity prepares a military force better for combat than combat itself, the mantra 'train as you fight' remains as valid as it has ever been. Realistic and frequent training and practicing is the foundation for combat power.

## It's not just about the technology, but technology certainly matters

War, at its fundamental level, is about the violent use of weapons in combat. It is only natural that defence thinkers spend a significant amount of time on new developments in military technology and how they can be put to use. Caution is required however when debates about emerging trends in warfare become overly technology-centric, particularly when grand claims of revolutions in warfare are made. Criticism of this over-optimism made up a significant portion of commentary on the 'revolution in military affairs' and continues to do so in the context of 'multi-domain operations' today.

Still, a number of EDTs could prove to be extremely valuable in modern warfare, , if properly integrated into warfighting and operations concepts. These include:

- Electronic warfare (EW), especially jamming, has proven important on the battlefields of Ukraine, Syria, and the Caucasus in recent years. Winning the 'battle over bandwidth' is instrumental in dominating the actual battlefield.
- Real time intelligence derived from space assets distributed through command and control networks running on privately owned infrastructures has similarly proven vital in the current war. This creates pervasive transparency and shortens kill chains from hours to minutes.

It also creates unique vulnerabilities as private actors that own crucial parts of the C4ISR, can ignore or deny state requests for support.

- The ability to exploit data, more specifically through the ability to process it quickly using machine learning applications that are integrated in the OODA (Observe-Orient-Decide-Act) loop, is vital for efforts ranging from targeting to intelligence analysis.
- Information manoeuvre on and off the battlefield is vital both for the 'hiding and finding' for forces across all domains and for the management/manipulation of public perceptions, both local and international.
- Unmanned systems on sea and in the air including sophisticated Bayraktar TB2 to ones handcrafted in workshops close to the front, are indispensable not just for intelligence but also for targeting purposes.
- Each of these areas carries with it considerable strategic, ethical and legal considerations around the use of force, the manipulation of data and information, and the relationships between public and private actors, that require close examination.

# Fire and manoeuvre – building on old concepts

Manoeuvre warfare, and the various ways in which it has been repackaged over the decades, is not by itself new. Alongside its inseparable defensive concepts, it is iterative. Progressive accumulation of technological development in parallel with the expanded geographies of urban areas have created new means and contexts, but the fundamentals remain the same. The inclusion of deep precision strike into manoeuvre is clearly a priority for NATO. Attrition on the battlefield is a core condition to be reintroduced into both planning and strategy-making. Recovering the best of the old and drawing on the best of the new are the two strands of rethinking NATO's operational art.

# Critical capability gaps

Alongside the conceptual element are the capability gaps that leave European states little to manoeuvre with in the first place. Long-range artillery, deep precision strike systems, and ground-based air defence systems, among others, are all vital fire platforms that will need to be developed, procured, and organically integrated into units in order for there to be sufficient fires *capacity*. This, in tandem with a European-owned digital backbone network, remain critical areas for individual and collective investment for visions of fire and manoeuvre to materialise in the first place. With this entrenched reliance on networks and data, there is a need for shared awareness in the cyber and space domains in support of operations in the physical domains, requiring new approaches to information sharing between services and allies.

# 3. Warfighting across Shaping, Contesting and Fighting

## A primer on multi-domain operations

Many NATO allies, and NATO itself at different levels, have invested a significant amount of time and intellectual effort in developing a new wave of military conceptual thinking about MDO. A clear convergence has grown in ideas about what MDO is: a focus on using joint fires (including in cyber and space) to try to rapidly disrupt and paralyse the enemy's decision and action cycles. This convergence has coincided with the maturation of key technologies in C4ISR, communications, and long-range fires to enable the experimentation with MDO as a concept, taking it from the 'thinkers' to the 'doers'. Importantly, and in hindsight fallaciously, MDO has been seen as a way to avoid serious attrition in new wars, the flaw being that attrition and manoeuvre are not mutually exclusive on the battlefield.

MDO as a general idea evolved largely from U.S. Army thinking on how to overcome, or offset, the perceived quantitative advantages of adversaries such as the Soviet Union (later Russia) and China. Planners envisaged a combination of deep strikes behind enemy lines against support targets like logistics and C2 nodes, while at the front a highly-mobile battle would be fought to blunt a numerically superior assault. This emphasis on the deep battle, particularly through the use of precision-strike weapons coupled with advanced ISR became highly fashionable not only amongst NATO militaries, but also other advanced forces such as in Israel.

By the 2010s, NATO had become particularly focused on overcoming the perceived challenges of Russian and Chinese A2/AD approaches that were aimed at negating Western airpower strengths. In this period, a variety of MDO concepts, proliferated across NATO allies and elsewhere. At the core remained a focus on precision-strike and ISR. Coupled with this came a new focus on non-kinetic actions from the cyber and space domains, wherein they could be used, theoretically that is, to reduce the level of force required to achieve an effect.

# Core challenges within MDO

Across different NATO allies, armed forces rely on different definitions of MDO, which leads to Babylonian confusion. It is necessary to align efforts through NATO processes and procedures which can then help steer national MDO development.

The perennial challenges of military operations remain within the context of MDO thinking. C2, dispersion and concealment, logistics and supply, as well as the ability to integrate into combined arms, joint, and multinational settings, are central challenges for concept developers.[2] Arguably, current MDO approaches are not well designed to address these challenges. The focus on achieving rapid, decisive effect has largely left the challenges of sustaining integrated forces over longer periods of time unaddressed. MDO does not answer the challenge of a prolonged, attritional campaign.

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The questions of integration remain as well. The word itself can create more confusion that it seems. Should more limited European resources be put into actually integrating the joint forces of different countries, or on better coordination between military and non-military 'manoeuvre' to achieve the same effects? Additionally, finding the right 'echelon' around which to design MDO C2 remains an outstanding issue. Within NATO at least, an alliance where some allies possess brigades at the highest level while others have entire army groups across a theatre, being able to bridge the gap between the current alliance approach to MDO and the realities of European force structures is perhaps *the* MDO challenge for NATO.

'Who gets what' in inter-service rivalries can threaten to erode buy-in from across the different services. Organising 'multi-domain exercises' requires a significant amount of buy-in as well, as services need to coordinate training needs. Resolving which echelon is the multi-domain 'coordinator' or 'commander' steps directly into *intra*-service tensions. These can be challenges at the alliance level as well, because if the corps or division level is identified as the 'right level' for NATO, that makes it difficult for allies whose highest echelon is the brigade to design and practice their participation. NATO and national concept developers will need to utilise joint efforts and reference other service concepts where applicable, while they also need to further articulate the correct echelon to coordinate MDO efforts, with a special focus on the Division and Corps levels.

Moreover, it is essential that the technology is sufficiently mature (capability) and available in sufficient numbers (capacity) to ensure that visions of MDO materialise. NATO needs to consider this in its NATO Long Term Defence Planning assessments, create roadmaps that explicitly address technology maturity, and practice in real live war scenarios with different technology mixes.

Finally, conspicuously absent in many of the allies MDO concepts are theories of victory that stipulate defeat mechanisms across a set of different scenarios. Concept developers need to formulate clear threat definitions and specific problems that are solved and develop theories of success with defeat mechanisms for a range of conflict scenarios.

2 For more on the evolution and challenges of MDO, see "Multi-Domain Operations: Passing the Torch," by Dwight "Buzz" Phillips (HCSS, September 2023), https://hcss.nl/report/multi-domain-operations-passing-the-torch/

## Adversary counter-adaptation

As noted already with the Soviet concept of deep operations and the various A2/AD zones in key areas, NATO's adversaries have at least maintained pace conceptually. The adaptation of the Russian land forces in Ukraine into a defence-in-depth strategy has proven that battle-field adaptation matters equally if not more than peacetime planning. Russia, China, Iran, and even more technologically advanced non-state groups such as Hezbollah have absorbed the importance of longer-range precision-strike weapons into their ways of warfare.

It will be important to consider how new schemes of manoeuvre for NATO will cause likely reactions. Adversaries may well mirror-image NATO approaches in their own efforts. New NATO thinking may inadvertently create weaknesses that can be targeted by enemy strengths. The reciprocal nature of both peacetime innovation and battlefield adaptation will have to be addressed head-on by planners.

## Fire, manoeuvre, and the fundamentals of warfare

Both critics and supporters of MDO have decried the confusion these new concepts have created, rather than contributing to greater clarity about the evolving needs of combat forces. MDO can never make war 'not war'. Passion, reason, chance, and violence remain the funda-mental nature of warfare.

There are, as described in the preceding sections, a number of open questions that do not have ready-made answers. It should be born in mind that in the history of war examples of quick, decisive, 'master strokes' that deliver victory in a matter of hours or days, are few and far between. Indeed, hubristic assessments about the ability to do so can lead to bloody attri-tional campaigns that draw in vastly greater resources than were anticipated.

We should therefore not overlearn from current wars. The character of a war is inherently bound up in its unique political ends, geographies, actors, and ways of warfighting. By focusing military efforts on achieving the fundamentals, there is a lessened chance of over-correction in the face of yet limited and premature information. This speaks to the need of experimenting and practicing new approaches, rather than keeping them at the theoretical level. Shifting from the 'thinkers' to the 'doers' in the field, using exercises and simulations, will be necessary in order to take the next steps in fire and manoeuvre.

# 4. Technology and the Changing Fight

## A sceptic's approach to military technological optimism

The tools of warfare are naturally central to the study and preparation for the future of conflict.

The tools of warfare are naturally central to the study and preparation for the future of conflict. Assessing the actual impact that new tools will have on the character of warfare remains a challenge. In some instances, there have been true military revolutions, usually bound up in wider and more fundamental trends such as in the cases of steam power, jet-powered flight, or the digitalisation of our societies. In others, there has been far too much hype or it was far too premature.

Predicting the impact of EDTs on the character of warfighting is difficult. Four perils can be identified though, that enable analysts and planners to think more productively about military technology:[3]

1. **Reliance:** Appreciating the reliance on and protection of private sector infrastructure, innovation and technology. Governments, much less the armed forces, do not own most of the communications networks and data management capabilities upon which they rely. Control and protection over this infrastructure, to include against industrial espionage, and associated technological developments cannot be assumed, even *in extremis*.

2. **Congestion:** Civil-military congestion in advanced economies. Advanced technologies, including image and language processing software, will be used just as much by civilian actors as they are by the armed forces.

3. **Scaling:** EDTs cannot be effectively scaled by militaries. The pace at which private-sector EDT innovation moves races far past official defence planning and procurement timelines. A new 'good enough' approach for some areas of procurement and deployment is likely needed to actually stay ahead.

4. **Limits of awareness:** Knowing is not enough. Even with perfect awareness and understanding, it means little if there is nothing a force can do about it due to a lack of supply. Large investments in capable ISR need to be balanced with capacities that soldiers, sailors, and airmen need to do their jobs.

3 For more on improved approaches to assessing technology's impact, see "The Promise and Peril of Emerging Disruptive Technologies for Joint and Combined Multi-Domain Operations," by Nina Kollars (HCSS, September 2023), https://hcss.nl/report/promise-and-peril-of-emerging-disruptive-technologies-multi-domain-operations

# Data, data, and more data

One area in which there has been significant development, and one that offers possible shifts in the character of warfighting, is in the use (and abuse) of data. This is perhaps most readily understandable within the context of intelligence collection, analysis, and dissemination. All-source intelligence analysis (or 'fusion') has been a dominant trend in intelligence work for decades as of this writing. Collection from across a mass of airborne, maritime, human, signals, and space-based intelligence has generated exabytes (billions of gigabytes) of information that requires processing into intelligence. This is not possible with human analysts alone.

Referred to as the 'fog of more', this mass of intelligence risks succumbing to the fallacious reasoning associated with Robert McNamara and his acolytes during the Vietnam War, where it was believed that with the right amount of data and the right application of quantitative methods key challenges in warfare could be overcome. Having so much data breeds an overconfidence in its quality.

Yet, building data for intelligence advantage can support cognitive superiority and the development of a 21st century manoeuvrist approach by speeding up the ability to process raw data into meaningful intelligence. Investments in data processing capabilities are thus crucial. In order to have higher confidence in what lies within the mass of information it needs proper management and processing. This is no easy task. Tens of billions in investments have been made across European states, North America, China, Russia, and many others to be able to harness this mass of information, private, public, and classified, into useful intelligence to inform decision-making on uses ranging from military targeting to economic planning. This congestion in data storage and management, to say nothing of the networks over which it flows, is a serious challenge as its production and dissemination around the world continues to proliferate.

# Europe's fragile defence technological industrial base

Can European states actually harness this technological revolution for military purposes? There has been significant investments made in artificial intelligence (AI) and machine learning across many European states, to include on defence purposes. The level of investment and actual progress made remains highly differentiated across the continent however, with a clear two-speed dichotomy emerging between Northern and Southern European allies.

Both the good and bad news about the European defence industrial base, as it applies to more innovative capabilities, stem from the same dynamic: a supplier-side market for defence innovation. While there is a significant and innovative technology sector across Europe, there is not sufficient government demand nor capacity to absorb such technologies. Demand, and even detailed understanding, often lags greatly when it comes to defence applications of new technologies.

Should more systematic and coordinated state-led investment and demand increase, there are pathways to better coordinate investment in Europe's defence technological base.

Particularly for Europe, where multinational projects can help facilitate horizontal integration to balance the currently shallow vertical integration of AI applications. There are opportunities for defence innovation measures like NATO's DIANA and the EU's Defence Innovation Scheme to streamline capital investments (outside sluggish state procurement systems) and more quickly identify test-case applications for new programmes.

## Building the capability and capacity for fire and manoeuvre

The looming challenge of defence technology within Europe, however, is not just the integration of EDTs, but rather the proper balance between highly-capable (and more capital intensive) platforms and projects and capacities in key areas such as munitions. The shortfalls alluded to by NATO Chair of the Military Committee Admiral Rob Bauer, with ammunition stocks being "at the bottom of the barrel", are certainly cause for concern in Europe's industrial base. Highly-capable but small and underequipped armed forces cannot survive in a war of attrition.

Quantity, therefore, is a quality in and of itself.

Quantity, therefore, is a quality in and of itself. As NATO planners move forward in implementing new development and employment concepts, the capacity of the European defence industry to sustain longer and more intensive operations should not be taken as a given. 'Techflation' has made armed forces not only smaller but less affordable. Discussions will likely be necessary between industry and NATO defence planning staffs in order to ensure that the armed forces of NATO Europe are not left with dry weapons in the event of an Article 5 scenario or even a more limited crisis.

# 5. The Future of Command in NATO

Staff functions, while vital in many areas, cannot offset the need for combat capacity and readiness.

## Coordinating across government, not just the military services

NATO's response to the Russian attack against Ukraine has highlighted not only the need to more effectively coordinate military activities across the alliance, but also in conjunction with economic and diplomatic actions. From the outside, the ways in which the sanctions regime and NATO defence plans have been considered as a package of actions by government officials is not immediately clear.

The role of economic measures in achieving a 'denial' effect, i.e. raising the cost of a potential attack, should be considered alongside considerations of deterrence by denial approaches. Shared *intent* across instruments is vital, as this allows for a coordinated scheme of manoeuvre with shared ends across military, diplomatic, and economic activity. This of course entails a significant amount of interagency coordination and planning, the capacity for which is highly differentiated across NATO. While NATO does not in and of itself have 'other instruments of power' at its disposal (though in the Cold War there was a dedicated Economic Committee and related staff), it can serve as a consultative body whereby allies, supported by expert staffs, can disclose plans related to non-military actions that have an intended impact on an adversary's military capacities.

## Command versus Control

NATO forces are arguably quite good at establishing *control* procedures within military systems. The substantial risk aversion evident in modern headquarters demonstrates this on a near-daily basis. This however comes at the cost of flexible and effective *command.* Many NATO militaries have a top-heavy military system in which the ratio of officers to enlisted personnel is much lower than in the past, putting a premium on procedure rather than combat power. Staff functions, while vital in many areas, cannot offset the need for combat capacity and readiness.

NATO military headquarters structures (particularly at the operational and tactical levels) are too large, write too long and detailed orders, and take too long to develop said orders. For example, when in the Second World War or even the Cold War orders to field formations may be a page or two long, many current orders take up reams of paperwork and must be

developed within a specific set of procedures and guidelines. Much of this, it was argued, is due to fears of blame being assigned should an operation or other endeavour fail.

Instead of such a procedure heavy approach to command, a more naturalistic and instinctual method can be stressed that allows for not only faster but more effective decision-making by leveraging the initiative of lower-level leaders. In effect, it is pulling 'mission command' or *Auftragstaktik* out of the realm of theory and into practice in the field.[4]

## The politics and cultural aspects of command

Command is of course not only a product of the structures in which it is embedded, but also the wider political and cultural context in which it sits. Different nations conduct command differently, owing both to national experiences in wartime and to the needs of the political system. This is especially relevant in different national perspectives on emphasising 'mission command'. Lower-level initiatives by the armed forces may not always be welcomed in political systems in which there is a political-military culture of much more centralised authority and firmer subordination of the military to civilian control measures. This of course is more complex in NATO, wherein differing command cultures can clash.

C2 as a concept is also less distinct than is perhaps described in agreed terminology. It can perhaps be better understood as a prism through which different activities, from technological developments to command structures, can be viewed. It is certainly a practice, with the command aspect being central to the focus and synchronised actions of forces in the field. It is also a technological function, with significant resources and infrastructure invested to establish control. It entails both leadership, which can be more or less flexible, and management, which is often prescribed by the maintenance and following of strict procedures. Importantly, the technological piece of control can create a temptation to try to control everything and to use communications tools and improved ISR to micromanage at levels inappropriate to a certain command echelon. It is not necessary for a joint force commander to direct battalion level movements in an area, despite having the capability to do so.

## C2 and new thinking on fire and manoeuvre

How can NATO better command forces in order to better employ fires and conduct manoeuvres using different domains? At different levels command practices certainly require revisiting. As SHAPE currently undertakes efforts to transform into a strategic warfighting headquarters, the actual role that it takes in relation to both operations in the field and to political leadership decision-making should be explored. Certainly, SHAPE as a strategic level headquarters would not be the appropriate location to be conducting fires below the theatre-level.

4 For more on this topic, see "The Changing Character of Command," by Jim Storr (HCSS, September 2023), https://hcss.nl/report/the-changing-character-of-command/

Perhaps it best serves as a coordination headquarters, with the aim of leveraging theatre-level assets (e.g. deep precision strike, cyber-attacks) in conjunction with larger scale manoeuvres.

Below the strategic level, a primary emphasis on training and rebuilding the muscle memory that encourages initiative rather than instinctive risk aversion needs attention. Headquarters at the Corps level and below should conduct realistic training and exercises that use the forces that are notionally assigned to their command. This of course requires significant investment in and of itself, however it would be less than ideal to find that there are deficiencies in NATO headquarters C2 arrangements at the outset of a war.

# 6. Conclusions

A core conclusion of this symposium is that NATO will be challenged, in its current approaches and thinking, to engage in the type of high-intensity war seen in Ukraine. Shortfalls in training, munitions, data processing capabilities, and personnel remain structural challenges that have yet to be overcome. New concepts, specifically MDO, have seemingly underappreciated the impact of battlefield attrition, ignoring the fundamentals of warfare's reciprocal nature. Europe's defence industrial base, tooled for an era of austerity and discretionary operations, is not in a state to be leveraged effectively.

NATO will be challenged, in its current approaches and thinking, to engage in the type of high-intensity war seen in Ukraine.

Fully grasping this baseline for NATO's defence is crucial for taking new steps that can better allow NATO to shape and contest its adversaries outside of a war, and to defeat them should a fight begin. Better thinking on how to use fire and manoeuvre (in both its physical and non-physical aspects) and on how to build necessary capacities can open a window into turning Europe's latent military potential into something real.

Preparing for prolonged military competition, with the real possibility of escalation to high-intensity warfare, requires particular attention to developing and testing operational concepts that emphasise both advantages in understanding (intelligence and analysis) as well as a renewed focus on the capability and capacity of fires. Tactical fires across domains will need to be built up, otherwise manoeuvre-centred forces will not be effective. Beyond the tactical battle, schemes of manoeuvre at the operational, military-strategic, and political-military levels that coordinate and deconflict various lines of effort will be needed to make clear arguments about why and how actions might achieve desired results.

## So what for warfare development?

What do all of these considerations mean for those trying to solve these challenges from inside NATO? The following is offered as a list of potential measures that planners could highlight in new concepts, planning inputs, and strategy-making:

- NATO needs to collectively think about the practical needs of territorial defence along the breadth of the eastern flank of the alliance. This includes, among other elements:
  - Assessing and sharing the level of readiness of reserves;
  - Assessing and sharing the status of hardened military and civilian infrastructure;
  - Studying the ways in which fires can be prepared and pre-planned so as to be most effectively at the outset of a defensive campaign.

- Defence planners and strategists on NATO staffs need to consider several intellectual exercises when developing new concepts and longer-term plans:
  - Include clear and unambiguous threat descriptions and problem statements;
  - Practice developing and testing theories of success and defeat mechanisms to better craft arguments for how new ideas will be transformative;
  - Rigorously consider the maturity of technology and when it will likely be deployed at scale.

- The alliance can further operationalise its MDO approaches but it needs to confront real challenges including serious deficiencies in the European defence industrial base that have led NATO Europe to lack both capability and capacity in vital areas for fires and manoeuvres.
  - Information, especially space-based ISR and unmanned systems across domains;
  - Data processing and machine-learning to support analysis;
  - Backbone communications networks to support combined, multi-domain forces;
  - Munitions shortfalls in key long-range fires such as artillery and deep precision strike missiles;
  - Capacities in hardware across domains that are less resilient to attrition.

- A significant emphasis needs to be placed on training and ensuring the combat competency across the armed forces of NATO. This would require:
  - Rigorous and routine training and exercising, including LIVEXs, real logistical moves, and simulated attrition;
  - Simulate and actually demonstrate the use of deep precision strike as part of exercises in combination with manoeuvres across all domains;
  - Practice Corps-level manoeuvres across the NATO theatre of operations
  - Delegated command authorities and exercising at the Corps and Division levels.

- Alliance C2 arrangements need to be assessed within the context and needs of new NATO-wide defence planning concepts. This could include:
  - Leveraging the Joint Analysis and Lessons Learned Centre (JALLC) to study different national approaches to 'mission command' and how NATO Corps, Division, and Brigade level HQs could be streamlined;
  - Consider a renewed Connected Forces Initiative, to ensure persistent investment in an intra-alliance communications backbone.

- Defence planners need to engage with the NATO Industrial Advisory Group (NIAG) and the Conference of National Armaments Directors (CNAD) to develop clear requirements and supply-chains to ensure munition capacities.

- Planning staff at NATO Headquarters in Brussels should consider the development of policy that allows for the coordinated and routine sharing of information related to non-military actions, such as sanctions and other economic measures, within the context of overall alliance strategy.

Overall, most relevant for defence planners around the alliance is the fact that: 1) significant capacity is needed to effectively employ fires and 2) regular and realistic practice of coordinating actions across instruments and of employing fires across all domains are central to ensuring NATO can achieve its defensive efforts should deterrence fail.

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