

**FACE THE
FUTURE:
CONCEPTS ON
FORCE DESIGN**

SUPPLEMENTARY PUBLICATION
TO THE NZ ARMY JOURNAL
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NEW ZEALAND DEFENCE FORCE

CONCEPT

/Konsept/

noun

noun: **concept**; plural noun: **concepts**

an abstract idea.

“structuralism is a difficult concept”

synonyms: idea, notion, conception, abstraction, conceptualisation

a plan or intention.

“the centre has kept firmly to its original concept”

an idea or invention to help sell or publicise a commodity.

“a new concept in corporate hospitality”

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Foreword

From the Chief of Army

As the Chief of Army, I place great importance on our Army professionals being able to think clearly and critically about future armed conflict and how we evolve our organisation for the soldier of year 2035. This publication *Face the Future: Concepts on Force Design*, is a collection of papers submitted to the *New Zealand Army Journal* that support the wider discussion around the *Future Land Operating Concept 2035*¹ (FLOC 2035) that was published in 2017. The FLOC 2035 provides guidance for the development of concepts, experimentation, planning, force design and capability modernisation. The collection of papers in this publication supports the discussion of concepts that could possibly affect the way we operate in the future, in a wide range of environments with a multitude of traditional and non-traditional partners.

I encourage you to critically think, discuss and debate the concepts and recommendations in this publication. Take time to analyse the topics, and then discuss your thoughts and opinions with leadership, peers, colleagues and subordinates. Put your thoughts on paper and conduct your own problem framing. The topics are extensive but not comprehensive. I encourage you to challenge perceptions and the understanding of what is

normal. The *New Zealand Army Journal* is a great platform to share your thoughts and opinions, however, it is only valuable and worthwhile if it has content. I heavily rely on you as a professional to provide critical thinking, analysis and debate. I also want to encourage you to look at historical lessons that highlight some of the tenets of success and challenges that our predecessors went through. An important aspect of learning is knowing what to learn and understanding its relevance to the future.

Lastly, I would like to take this opportunity to thank every person who has contributed to the *New Zealand Army Journal* so far; be proud of your contribution to the discussion and debate. Be confident in your contributions; these discussions shape decisions, and the decisions we make shape our future force.

Kia Rite (Be Ready)

P. T. A. E. Kelly MNZM
Major General
Chief of Army

1. <http://www.nzdf.mil.nz/about-us/our-key-documents/future-land-operating-concept-2035.htm>





‘WHAT DOES AN ARMY OF 5000 LOOK LIKE?’

By Brigadier Chris Parsons

Brigadier Chris Parsons MNZM, DSD became the Defence Advisor to the United Kingdom and Ireland in January 2018.

The aim of this article is to spark wider discussion about our future force and, in particular, the Chief of Army’s question: “What does an Army of 5000 (plus reserve forces, civilians and volunteers) look like?”

What is Force Design?

It’s been said that “if you don’t like change you’ll like irrelevance even less”.

Organisations that do not periodically refresh themselves find that their strategies, structures and systems can become barriers to efficiency and effectiveness – even if they had previously worked well. Force design is a methodical review to ensure

the ‘form’ of the Army (shape, size, structure and accountabilities) matches its purpose and the challenges posed by current and future operational realities.

In a complex organisation like the Army design is iterative (happening on every level all of the time). However, there is an underlying hierarchy of considerations.

The first and most important thing is to understand the drivers of change and to agree a ‘concept’ that allows us (and those who follow us) to achieve the Army and the New Zealand Defence Force (NZDF) purpose and meet the future’s challenges and opportunities. The *Future Land Operating Concept 2035 (FLOC 35)* is designed to start that debate. Second, we then ‘organise’ to achieve our concept. Third, we ‘systemise’ to align our tactics and processes so we can achieve our objectives as efficiently as

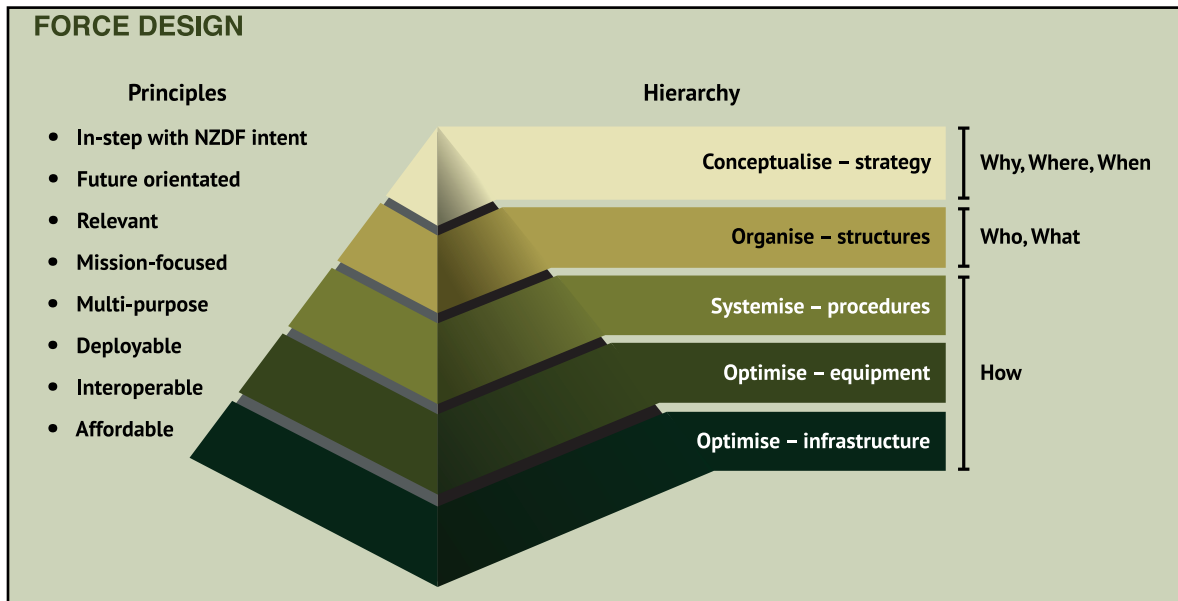


Figure 1: Principles of Force Design

possible. Fourth, we make long term equipment and infrastructure decisions that support our concept and ‘optimise’ our ability to win (see Figure 1).

Army General Staff’s force design team are primarily focused on the first two levels of the hierarchy: but given the iterative nature of design, they work closely with capability projects like the Network Enabled Army, Protected Mobility and Soldier Modernisation as well as infrastructure regeneration via the Consolidated Logistic Project and Defence Estate Regeneration Programme.

What are the drivers of change?

The *FLOC 35* argues that the security environment is changing. Globalisation, population growth, proliferation and the information age mean that the environment is more connected and monitored, more crowded and more lethal. The result is that future missions will be more complex as adversaries exploit the intersection of these pressures. To succeed in this environment we need to work more closely with partners – we need an integrated approach.

Figure 2 shows the integration of our roles along a spectrum – with enemy centric operations at one end, where we will be called upon to combat adversaries, and human centric operations at the other end in which we respond to disasters and support civil authorities. Operations in the middle aim to maintain the stability of the international order. Each of the three securities is connected. Partnering with others to support human security builds resilience and prevents destabilising pressures from undermining systemic security – which if let run would ultimately put sovereign security at risk.

To meet the challenges of the security spectrum the *FLOC 35* proposes five integrated land missions. The first is information activities (inform). In the information age, all missions will need to

be conducted in the context of the first mission. Second is Joint Land Combat (combat). NZDF is the only organisation that can deliver this for New Zealand. Third and fourth are population protection (protect) and capacity building (build), fifth is population support (support). Figure 3 shows how these missions intersect. The underlying idea is that combat capability is the bedrock of our effectiveness. Capacity building is our fulcrum: we prevent conflict by building resilience and we help resolve conflicts by rebuilding institutions.

The future Army will need to both fight and build. In combat missions we will need to fight then build. In support missions we will build to prevent a fight. In protection missions we may have to fight and build at the same time.

To deliver these effects, the *FLOC 35* argues that the New Zealand Army requires four fundamental characteristics (see Figure 4):

- » First, and by definition, the New Zealand Army is a light fighting force. Some nations have light, medium and heavy forces. Given New Zealand’s location and resources the New Zealand Army is a light-force based on its size and firepower.
- » Second, if we are light we need to be agile. We need to be quick on our feet – we need to be multi-purpose, we need to be able to transition between tasks quickly and be able to scale up and down as required.
- » Third, in an increasingly lethal environment we need to be precise. We must use our limited resources for the greatest impact and be able to see and understand better than our adversaries so we can shield ourselves from attack. Consequently, digitising the force is the New Zealand Army’s main effort for capability development.

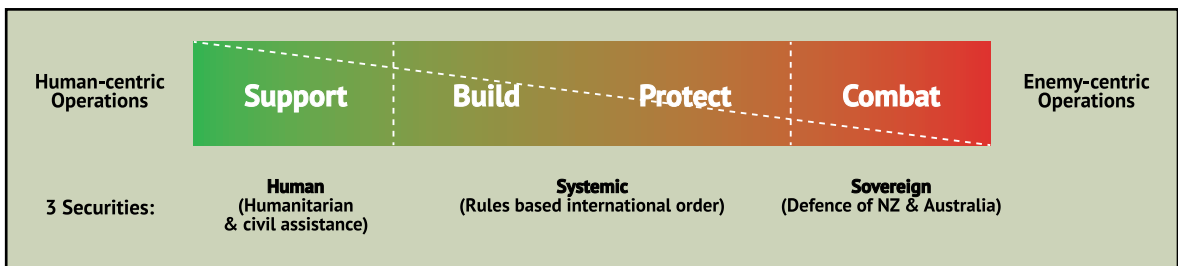


Figure 2: Spectrum of New Zealand Army Roles

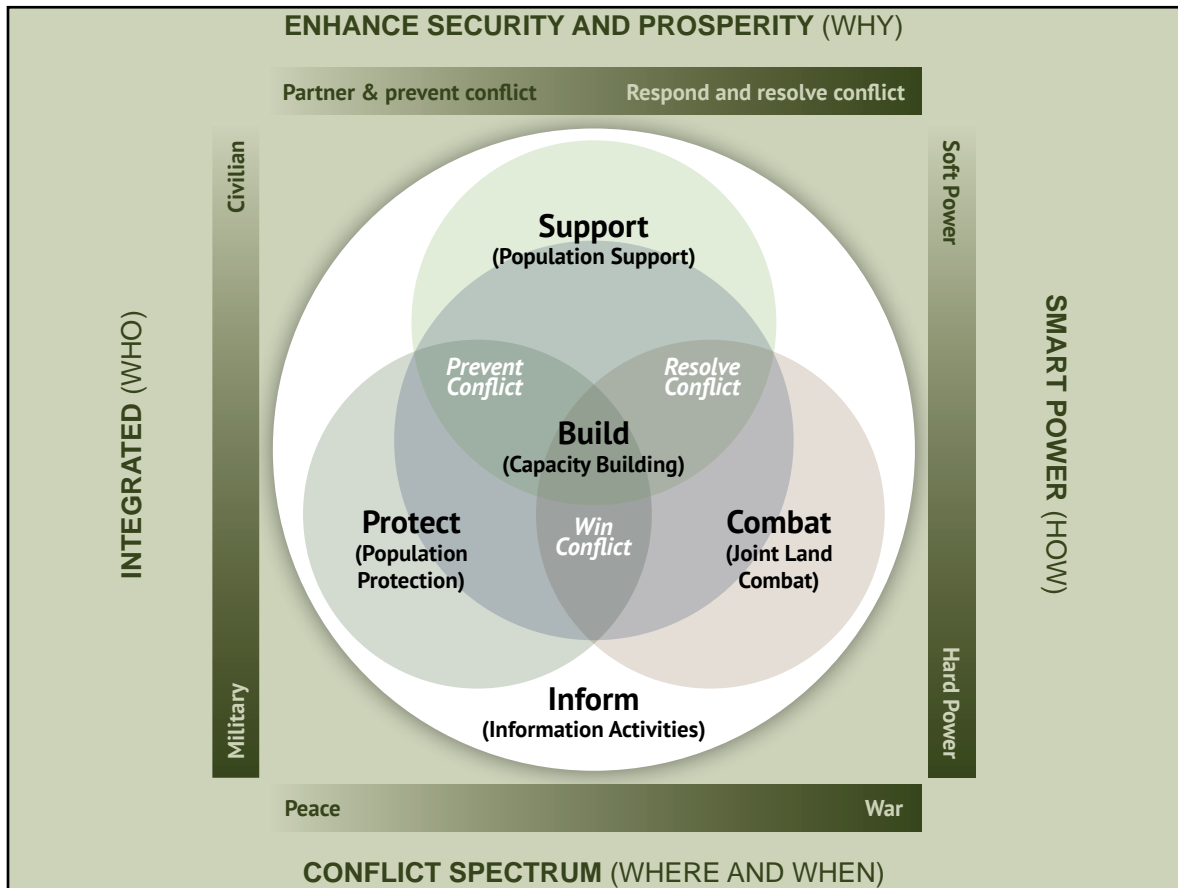


Figure 3: The Integrated Land Missions

- » Fourth, we need to be force multipliers. We multiply our ability to exert force and influence through tactics, resourcing decisions and relationships that enable our effects to be exponentially greater than the sum of the Army’s parts – we need to be able to punch above our weight.

Given this context, we need to ask and answer some hard questions if we are to achieve all we need to within an Army of 5000.

Light Fighters – Ko wai tātou?

Firstly, how do we define ourselves as light fighters? The *FLOC 35* argues that we need combat soldiers that are dismounted (light infantry), mounted (equipped with protected mobility) and light armoured (equipped with light fighting vehicles). Therefore, the light fighter’s doctrine is a

philosophical and conceptual approach. It includes, but is not restricted to, light infantry structures. If you agree with this, we need to consider how to structure our units to best achieve the agility, precision and multiplier effects we seek.

Currently we have organised our two Regular Force infantry battalions as light infantry and use combined arms exercises to ready them for mounted and light armoured manoeuvre. Another option would be to focus each battalion on a role. For instance, one Battalion might remain as light infantry kept at higher readiness and trained to work closely with air, amphibious and special operations forces – perhaps able to operate along similar lines to commando fighting columns. The other Battalion could be equipped for mounted operations that give it greater tactical resilience and reach, especially in open country and urban areas. Currently light armour is vested in Queen Alexandra’s Mounted Rifles, and there are

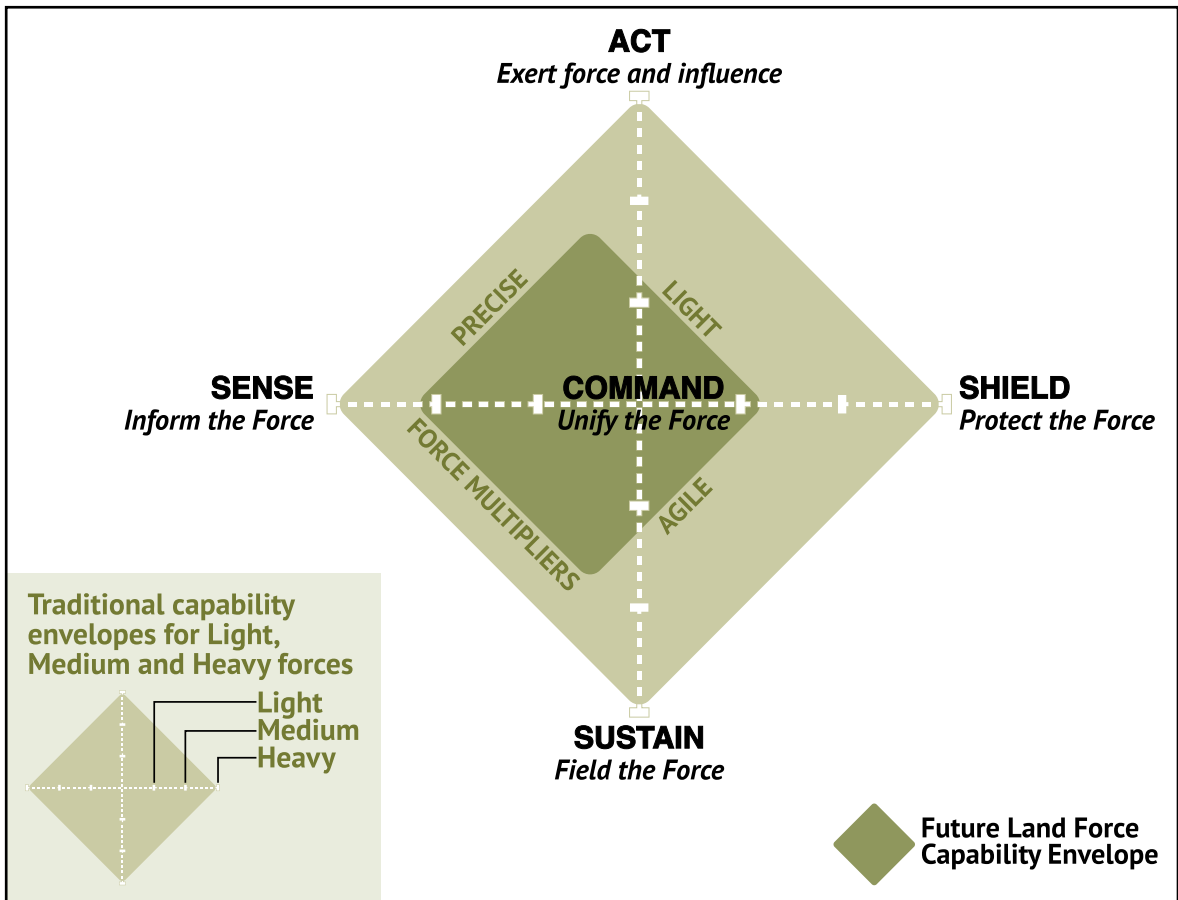


Figure 4: Future Land Capabilities

options to enhance this, perhaps with additional reservists. Alternatively, we could focus towards reconnaissance and surveillance.

These are important considerations because they impact the long term equipment decisions we are making. For instance, if you think we should remain light infantry based you are also arguing that we should place the bulk of our protected mobility assets with our combat support and combat service support troops. Each option has pluses and minuses.

Organise by trade or by task?

Deciding if land forces should be task organised or functionally organised along regimental and trade lines is a recurrent debate. Generally, a force should be task organised if their mission is clearly defined and there is limited time for pre-deployment

training. An example is the High Readiness Company: it needs to train with all its enablers to be effective at short notice. If there are many potential missions to prepare for and sufficient lead time to integrate force elements, then forces are best employed in their functional units where they can develop their professional excellence and periodically practise combined arms skills.

The force design team is interested in your views on how you think we can balance the competing pressures of professional excellence and combined arms excellence. Should we retain the current regimental structures or move to a task organised model, or is there a hybrid of the two? For instance, should we create a task group in the South Island based on 2nd/1st Battalion and leave the North Island units structured along functional lines to ensure the Army's wider agility. If so, what focus would you give the South Island Task Group?

Affordability: part time vs full time balance?

As our force becomes more technical the cost of personnel increases. Most of our international partners are addressing this by finding new ways to leverage their Reserve Forces so that they can retain a highly professional workforce without losing the ability to scale up quickly. Clever use of Reservists also enables the Army to reach into the market place and access niche skills that are not cost effective to generate in house. Currently, we are investigating focusing the three Reserve Battalions on civil defence, community engagement and the supply of soldiers to Reserve Force sub-units that are integrated into 1 (NZ) Brigade's Regular Force units. This would mean adding Reserve Force Companies to 1st and 2nd/1st Battalions.

- » What are your views on this?
- » How can we better use reserves to give us a wider talent pool?
- » How would you integrate reserves into your unit better?
- » Can we do that?

How do we keep up with and exploit the technology wave?

Accelerating technology means some Corps and trades need to evolve and even potentially reinvent themselves. With the advent of the 'man-machine team' on the horizon, robotics is one such driver.

- » How will this impact your area?
- » What sensible things can we explore now to prepare for the future?

Digitisation via the Network Enabled Army is another driver that will force a cultural change on the Army. Digitisation will improve our ability to distribute forces more widely in an operational area.

- » How can we leverage its power to improve our Intelligence, Surveillance, Target Acquisition, and Reconnaissance capabilities?
- » What do you think the implications are for our future work force?
- » How will it impact on our tactics and organisational structures?
- » What risks will it create that we need to find solutions to?

How can you be involved?

According to computer scientist, Alan Kay "the best way to predict the future is to invent it." The questions above are just primers; there are many others that will need to be addressed as we chart our future. As members of the NZDF and the NZ Army we are all kaitiaki (guardians). As such, all of us regardless of rank or role need to debate our concepts and look for better ways of doing business.

Options for you to have your say include the following:

- » Read the *FLOC 35*.
- » Engage with your commanders and Regimental Colonels.
- » Use SMA's blog to propose and debate ideas.
- » Contact force design project leader, Lieutenant Colonel Murray Brown murray.brown@nzdf.mil.nz
- » Contribute to the Chief of Army's Seminar 2018 (CASEM18), which will focus on force design and be held in the second quarter of 2018.
- » Innovate in your area.

Kia Rite (Be Ready)



DISTRIBUTED OPERATIONS: SEARCHING FOR A NEW ZEALAND APPROACH

By Major Sandra Patterson

Major Sandra Patterson is currently posted to Capability Branch, Headquarters New Zealand Defence Force.

Distributed Operations employ small, capable, tactical units that can leverage the power of joint effects and are spread across large areas; to avoid adversary strengths and gain psychological, temporal and spatial advantage through coordinated independent actions
*Future Land Operating Concept 2035*¹

The *Future Land Operating Concept 2035 (FLOC 35)* released in 2017 includes a question posed by Chief of Army regarding Distributed Operations (DO). Specifically, “how dispersed is too dispersed, and what constraints and considerations will arise in DO.”² This article seeks to address this question. It also seeks to address the lack of widespread understanding of how DO should be applied, or even what the concept entails, despite being part of the NZ Army FLOC lexicon for the last ten years. These issues will be addressed by exploring the background of DO and analysing the concept within a NZ Army context. Finally, it will make some recommendations about how the concept could be better adapted and integrated into the NZ Army.

DO was born in the minds of the United States Marine Corps (USMC) in response to an increasing number of potential adversaries who had acquired significant lethal firepower capability, and therefore an ability to achieve lethal effects on a larger and technologically superior force. These adversaries consisted of non-state actors as seen in the conflict in Gaza between the Israeli Defence Force and Hezbollah in 2006,³ or a highly dispersed enemy encountered during the War on Terror in the Middle East. Whilst the trend is of non-state actors gaining increased lethality and pairing it with

unconventional manoeuvre and tactics, the threat can also exist from state actors such as Russia, who employed hybrid tactics in the Ukraine in 2014.⁴

In response to the aforementioned threat, the USMC developed the DO concept. Simply, the concept⁵ is the dispersal of small combined arms groups of ground forces over large geographic areas that can quickly aggregate to achieve ‘traditional’ concentrated combined arms effects as required. It seeks to defeat the threat by isolating and destroying/neutralising small adversary groups with small, networked and highly mobile teams, whilst seeking to protect friendly forces by not presenting a large mass that can be targeted with lethal effects. Certain capabilities enable DO: accurate, guaranteed, and responsive long range joint fires; networked Command and Control (C2) and communications; intelligence, surveillance, target acquisition and reconnaissance (ISTAR); and “tailored logistics.”⁶

The USMC DO concept evolved to the Enhanced Company Operations (ECO)⁷ in 2008, as the USMC was not comfortable with distribution to Squad (Section) level. Routinely distributing to Section level is an exceptionally challenging proposition, whereas a Company has the C2 structures in place (albeit limited structures) to manage the coordination of fires and manoeuvre in a complex environment. The enhanced company would be task organised with “battalion level functions,”⁸ enabling them to operate more independently than previously. Rather than a complete shift in the way manoeuvre is conducted, the ECO seeks to “enable tactical commanders to decentralise their operations more effectively.”⁹ ECO is similar to the NZ Army practice of task-organising Company level groups into Combat Teams.

Is DO a new or revolutionary concept? Or is it a natural evolution of manoeuvre being able to disperse further and more effectively with better networked communications, weapons effects and fires technology, and protected mobility? Dispersed operations are nothing new; achieving dispersal to protect a force from the enemy's firepower is a concept that emerged from the development of gunpowder and early firearms technology. During the interwar period, Liddell Hart wrote about the "paradox of concentration and dispersion," and how forces should operate on "lines of least resistance."¹⁰ Indeed, the USMC explained in its DO Concept that fundamentally the concept was underpinned by Manoeuvre Warfare,¹¹ in that it aims to use DO to shatter the enemy's cohesion by influencing his decision cycle. Moreover, DO looks remarkably like a conventional covering force that can disperse and aggregate to protect or create opportunity for a main body depending on the situation. Major Lewis (USMC) in his article for the *Marine Corps Gazette* explained DO in terms of a "technique" rather than a conceptual shift.¹² What has developed, however, is the operating environment. Predictions about the future operating environment¹³ suggest that these small mobile teams will be operating within challenging environments such as in urban centres, as well as in the littorals against an adversary who is also highly networked, mobile and uses widely available technology to his advantage.

In such challenging environments is DO at risk of orchestrating the isolation of its own forces, or more simply, sending small teams out to die? This is where joint fires and effects come to the fore. The DO concept is predicated on accurate, guaranteed and responsive long range fires (such as close air support, rocket artillery and medium artillery with precision and extended range ammunition). Without the appropriate fire support, small teams are vulnerable to isolation and destruction by the enemy. As Colonel Goulding (USMC) states in his article *Distributed Operations* "No commander will ever distribute his force beyond his ability to support it and communicate with it."¹⁴ How far to distribute subordinate elements must be balanced with the support available.

Given the diminutive size of the New Zealand land combat output, and lack of organic joint fires assets with extended range, how does DO apply in a New Zealand context? There are two parts in response to this question. Firstly, whether DO suits the NZ Army from a conceptual and mechanical standpoint and secondly, how DO relates to our

specified outputs. Conceptually, DO is in concert with the NZ Army philosophical approach of Manoeuvre Warfare¹⁵ and Mission Command,¹⁶ allowing junior commanders to act and use initiative within a higher commander's intent. Within the DO concept, adherence to the Manoeuvre Warfare principles and Mission Command is paramount to its success. The practical application of this conceptual framework, or the mechanics of conducting DO are well suited to the NZ Army due to the routine practice of task-organisation at low levels, empowering junior commanders to make decisions and employing combined arms assets across the range of integrated land missions.

The New Zealand approach to task-organisation is similar to our ABCANZ¹⁷ Commonwealth partners (Britain, Canada and Australia), although it can differ from the US approach. The United States, with their vast size and relative combat power can prioritise mass over agility. This is important to note, as the DO concept was developed in the United States. The USMC ECO, a concept that the NZ Army is well versed in (knowingly or not), is business as usual. Conversely, there are several capability gaps that would need to be addressed to allow successful DO to be conducted by the NZ Army (note that the majority of these gaps are currently being addressed by current capability developments). These gaps include protected mobility for enablers, ISTAR capability, networked C2 systems (that are interoperable with our partners) and enhanced joint fires capabilities. The very nature of DO is that combat elements can operate outside the range of close support fires (e.g. mortars, light guns and naval guns) because they have access to guaranteed, precise and responsive general support fires (such as air assets and longer range artillery and rockets). Access to joint fires in land combat may be a limiting factor as to how far land elements can physically disperse, and to what level. As the *FLOC 35* states, "there is no manoeuvre without fire support."¹⁸

Access to coalition joint fires will be dependent on whether the NZ Army is conducting operations in an independent manner, or as part of an integrated coalition force. Currently the NZ Army land combat part of the NZDF output plan¹⁹ does not discriminate between these two different situations and the effect it would have on the land combat capabilities of a NZ land force. Whilst the task-organised nature of the Combined Arms Task Group (CATG) provides flexibility to construct a land force that can operate in either situation, it

provides little context about the key differences and the consequences of each option. An independent CATG (or at least semi-autonomous New Zealand Task Group (TG) operating in an independent area of operation (AO)) without guaranteed coalition support would be limited by the range and effects of its organic indirect fires capability without undue acceptance of risk. In a coalition environment where New Zealand land elements are part of a more integrated force, greater distribution should be able to be achieved through the coordination of coalition ISTAR, fires and logistics assets. This option is only viable with an investment in the capability of training New Zealand soldiers to coordinate coalition assets, rather than focusing on the basic capability bricks at the lowest level of that particular output. For example, in order to train a Company, Battery or Squadron effectively for coalition operations, a higher unit level framework must retain the ability to perform in that function for at least training purposes.

By understanding what the contribution of the CATG would be to a joint land combat coalition, and what potential capabilities can be leveraged in a coalition environment, we may better understand how this could apply to DO. There is currently much discussion around Chief of Army's Force Design Project,²⁰ and how we should organise, train and generate NZ Army forces to meet our outputs. We should consider what the NZ Army contribution to a coalition conducting DO would look like. If DO is enabled by "brilliance at the basics"²¹ then New Zealand land forces would be ideally poised to fulfil the role of the forward elements of a distributed force due to our high level of individual training and emphasis on decentralised task-organisation and mission command. Of course there would be caveats on this potential mission set including the threat level (the NZ Army is a light fighting organisation), and the access to coalition fires, ISTAR and logistics.

Therefore, to specifically answer the question of how dispersed is too dispersed is a matter of whether a CATG output is operating independently or as part of an integrated coalition organisation. As an independent CATG on land combat operations, distribution of TG elements will be limited by organic fire support capability. Presently the in-service light (artillery) gun can fire up to 20 kilometres if utilising extended range ammunition (trials but none currently in-service). Pairs of guns are able to split from a Battery to support sub-units (the trade-off being a reduction

in persistent, concentrated firepower), giving a TG a maximum frontage of 120 kilometres by 40 kilometres (in a linear battlespace), or an area of operations 80 by 60 kilometres. The limiting factors in these scenarios will be our current ISTAR capabilities would not be able to provide persistent coverage of such an area without significant gaps in enemy information and the range of our communications systems. Moreover, logistical support, especially for artillery ammunition, would be challenging and may rely heavily on aerial resupply. In a coalition environment, the CATG could leverage off coalition ISTAR, joint fires and logistical assets, thus distributing as far as the combination of coalition and organic capabilities allow. This may include accepting that "surface fires cannot cover the entire battlespace,"²² and our land force elements may need to rely on coalition air assets for the provision of fires (noting that this "assumes air superiority"²³ and air support is not considered guaranteed due to availability, maintenance and the effects of weather on air platforms). Another limiting factor in coalition DO will be the access to coalition digital networked systems and the appropriately trained personnel as part of New Zealand combined arms teams to facilitate access to coalition assets (such as artillery Joint Fires and Effects Coordination Centres, and Joint Fires Teams).

Before providing recommendations around how the NZ Army could better integrate and apply DO, it is worth discussing whether the concept is worth adopting at all. The short answer is yes. If our ABCANZ partners subscribe to the concept, then despite any misgivings about the validity of concept itself, the NZ Army should pursue DO from the perspective of interoperability and therefore effectiveness on operations. As the *Defence White Paper* and *FLOC 35* infer, achieving an integrated level of interoperability with ABCANZ should be a priority for the NZ Army.²⁴ Whilst sharing common concepts with our partners is paramount, we have the opportunity to define DO in a uniquely NZ context. In fact, it would be negligent not to do so, given that the concept was developed by an organisation with different capabilities and resources to our own.

The NZ Army can better incorporate DO in two ways. Firstly, it should formally define what DO is in the NZ Army context, and how it should be applied in practice. This should include a document that can bridge the gap between the conceptual FLOC to the myriad of corps doctrine, tactics, techniques and procedures used by the

NZ Army. Capability documents such as the Tier One Capability Definition Document should not define how we fight, but rather identify what our capability requirements are and what gaps need to be addressed. Currently there is no document that defines *how* the CATG should fight, either independently or in a coalition environment. A document of this nature could provide a capstone for training and the generation of forces to meet our outputs. Secondly, as part of the output review, consideration should be made to discriminate between independent and coalition operations; acknowledging that building capability bricks is not a simple maths equation, but training for operations (especially coalition operations) requires greater capability in some areas. Moreover, the outputs should consider what contribution New Zealand

could make to a coalition joint land combat organisation to leverage off the unique strengths the NZ Army possesses, such as the high training standard of sub-unit and below.

A bridging document between the conceptual and reality, and further defining the NZ Army outputs will provide the guidance the NZ Army requires to integrate DO into day-to-day business. Without the resources of our larger partner nations, the NZ Army is often compelled to piggy back off concepts that are developed for organisations with significantly different structures and resources. DO is a good example of a concept that is malleable to a uniquely New Zealand context with some additional consideration of how to practically apply the concept.

Endnotes

- 1 New Zealand Defence Force. *Future Land Operating Concept 2035*. (Wellington: Headquarters New Zealand Defence Force, 2017): 87.
- 2 Ibid. 84.
- 3 Grant, "Distributed Maneuver Beats Hybrid Enemies." (Military.com. 2009.) Grant discusses Kelly and Brennen (2009) in the context of Hezbollah utilising "distributed Defence."
- 4 Naval Studies Board. *Improving the Decision Making Abilities of Small Unit Leaders*. (Washington DC: The National Academies Press (National Research Council). 2012). Explains the acceptance of the term "hybrid" into US DOD doctrine. Renz, B. and Smith, H. "Russia and Hybrid Warfare: Going Beyond the Label." Aleksanteri Papers. 2016. Explains hybrid warfare demonstrated by Russia in the Ukraine in 2014.
- 5 Department of the US Navy. *A Concept for Distributed Operations*. (Washington DC: Government Printing Office, 2005).
- 6 Conway, (GEN, Commandant USMC). "A Concept for Enhanced Company Operations," *Marine Corps Gazette*. (December 2008): 60.
- 7 Ibid. 56. General Conway explains that "Conventional wisdom tells us that the Battalion is the smallest tactical formation capable of sustained independent operations; current operations tell us it is the Company."
- 8 Naval Studies Board. *Improving the Decision Making Abilities of Small Unit Leaders*. (2012).
- 9 Goulding, (COL USMC). "Distributed Operations: What's not to like." *Marine Corps Gazette*. (February 2007).
- 10 Hart, *Strategy*: 2nd rev. ed. London: Faber & Faber. 1954.
- 11 New Zealand Defence Force. *Future Land Operating Concept 2035*. (Wellington: HQNZDF, 2017): 34, 88.
- 12 Lewis, (MAJ, USMC). "An Operating Approach." Proquest, *Marine Corps Gazette*. (February 2007): 48.
- 13 New Zealand Defence Force. *Future Land Operating Concept 2035*. Chapter One – The Future Land Operating Environment. The FLOC35 evaluation of the future operating environment is in concert with our ABCANZ partner assessments.
- 14 Goulding, "Distributed Operations: What's not to like." Proquest, *Marine Corps Gazette*. (February 2007).
- 15 New Zealand Defence Force. *Future Land Operating Concept 2035*, 34. Manoeuvre Warfare is the "foundation warfighting concept...it is defined as an approach to operations in which shattering the enemy's overall cohesion and will to fight is paramount."
- 16 New Zealand Defence Force. *Future Land Operating Concept 2035*, 34, 88. Mission Command "promotes agility through a leadership climate that can be described as freedom within a framework."
- 17 ABCANZ is an interoperability programme between the Five Eyes armies (America, Britain, Canada, Australis and New Zealand) that aims to achieve integrated interoperability.
- 18 New Zealand Defence Force. *Future Land Operating Concept 2035*, 64.

- 19 New Zealand Defence Force. *Annual Plan 2017/18*. Wellington: HQNZDF. 2017.
- 20 New Zealand Army News, August 2017.
- 21 Goulding, “Distributed Operations: What’s not to like.” *Marine Corps Gazette*. (2007).
- 22 Conway, “A Concept for Enhanced Company Operations.” *Marine Corps Gazette*, (2008): 59.
- 23 Dunne, (LTCOL, USMC). “Enhanced Artillery Battery Operations.” *Marine Corps Gazette*. (February 2010): 34.
- 24 New Zealand Defence Force. *Future Land Operating Concept 2035*, 37. The FLOC states that “Interoperability with Australia remains the highest imperative for NZ within the Five Eyes Community.”

References

- Chambers, G. (LTCOL, Australian Army). 2015. *“A Model of Direct Fire Zone Engagements and How the Echeloning of These Engagements Can Result in Success or Failure.”* Unpublished Discussion Paper.
- Clark, E. T. (MAJ, USMC). 2011. *“The Future of Distributed Operations in the Marine Corps and its Vital Role in Forcible Entry from the Sea.”* USMC CSC. .
- Conway, J. T. (GEN, Commandant USMC). 2008. “A Concept for Enhanced Company Operations.” *Marine Corps Gazette*. (December).
- Dunne, J. P. (LTCOL, USMC). 2010. “Enhanced Artillery Battery Operations.” *Marine Corps Gazette*. (February).
- Department of the US Navy. 2005. *A Concept for Distributed Operations*. Washington DC: Government Printing Office.
- Dobson, R. K. Jr (COL, USMC). 2004. “The Distributed Operations Hurdles.” *Marine Corps Gazette*. (October).
- Erdie, P. B. (CAPT USMC). 2005. “The Implications of Distributed Operations.” *Marine Corps Gazette*. (December).
- Evans, M. 2008. “The Closing of the Australian Military Mind: The ADF and Operational Art.” *Security Challenges* 4(2).
- Goulding, V. J. Jr (COL, USMC). 2007. “Distributed Operations: What’s not to like.” *Marine Corps Gazette*. (February).
- Grant, G. 2009 “Distributed Maneuver Beats Hybrid Enemies.” <https://www.military.com/dodbuzz/2009/11/04/distributed-maneuver-to-defeat-hybrid-enemies>
- Griffin, C. (Major USMC). 2009. *Enhanced Company Operations in High Intensity Combat*. USMC CSC.
- Hart, L. 1954. *Strategy*. 2nd rev. ed. London: Faber & Faber.
- Hays, M. G. (CAPT, USMC). 2008. “DO Fire Support.” *Marine Corps Gazette*. (October).
- Kelly, J. and Brennan, M. 2009. *“Distributed Maneuver: 21st Century Offensive Tactics.”* Canberra: Land Warfare Studies Centre.
- Krause, M. (COL Australian Army). 2006. “The Case for Minimum-Mass Tactics in the Australian Army.” *Australian Army Journal* 2(2).
- Lewis, G. A. (MAJ, USMC). 2007. “An Operating Approach.” *Marine Corps Gazette*. (February).
- Naval Studies Board. 2012. *Improving the Decision Making Abilities of Small Unit Leaders*. Washington DC: The National Academies Press (National Research Council).
- New Zealand Defence Force. 2014. *Output Plan*. Wellington, New Zealand: New Zealand Defence Force.
- New Zealand Defence Force. 2016. *Defence White Paper*. Wellington, New Zealand: New Zealand Defence Force.
- New Zealand Defence Force. 2017. *Future Land Operating Concept 2035*. Wellington, New Zealand: New Zealand Defence Force.
- New Zealand Defence Force. 2012. *Future Joint Operating Concept 2035*. Wellington: New Zealand Defence Force.
- Renz, B. and Smith, H. “Russia and Hybrid Warfare: Going Beyond the Label.” (Aleksanteri Papers 1/2016, Kikimora Publications, Aleksanteri Institute, University of Helsinki, Finland, 2016).
- Thacker, D. L. Jr (LTCOL, USMC). 2005. *The Joint Interdependence of Distributed Operations*. “US Army War College.
- Tovar, Edward (LTCOL, USMC). 2005. “USMC Distributed Operations.” DARPA Tech.



NZ ARMY'S HUMAN DIMENSION CONCEPT: HOW TO ENHANCE THE DECISION MAKING ABILITY OF ALL NZ ARMY PERSONNEL

By Mr James Golightly

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In October 2014, the United States Army published their Human Dimension White Paper that provided a vision for how they will optimise the performance of their personnel through a framework that integrates elements of training, education, science, technology, holistic health, fitness and medical and personnel policies.¹ Following the release of the Human Dimension White Paper, the United States Army released their Human Dimension Strategy in May 2015. It was the delivery of these two documents that persuaded the New Zealand Army, in particular Army General Staff, and Headquarters Training and Doctrine Command, to facilitate a workshop to reenergise the discussion around how to better invest in its people going forward into the future.

This workshop, comprising various Army personnel of all ranks, identified three meta-categories that the participants believed to be the key areas in which the New Zealand Army should focus its resources in order to better invest in its people. These meta-categories were: 'The Brain', 'The Body' and 'The Skills', and soon thereafter became known as the New Zealand Army's Human Dimension Concept. Collectively, these meta-categories were believed to enhance the opportunity resulting from future force growth and subsequently reduce the risk associated with inadequate funding against Army's operational outputs. This paper will focus exclusively on 'The Brain' element of that concept.

So what does the term 'human dimension' mean, and why should the New Zealand Army take notice? In simple terms, the term 'human dimension' is about deliberately preparing human beings and organisations to become faster learners

and adapters in order to successfully cope with, and even to thrive in, conditions of complexity and uncertainty that we are facing now and will face in the future.² Since 2000, the New Zealand Army has contributed to 29 offshore operations, totalling thousands of personnel of all ranks.³ Such operations, like those in Afghanistan and the insurgency in Iraq, provide a glimpse of what the New Zealand Army is likely to face in the future. The character of these conflicts demonstrates that cognitive pressures on military personnel are already high and are predicted to rise for several reasons. Firstly, personnel frequently make complex decisions, under time pressure, that can have lethal implications and severe consequences if they get it wrong. Secondly, these life-and-death decisions may be complicated by ambiguities, such as the blurred lines between population-centric operations and conventional combat or between hostile civilians and plain-clothed insurgents.⁴ These projected cognitive pressures will consequently place a greater demand on the New Zealand Army to enhance the decision making ability of its personnel to enable them to thrive in conditions of complexity and uncertainty – an inevitable factor that will become inherent to all future conflicts.

Extensive published research from psychologists Daniel Kahneman and Amos Tversky on intuitive versus methodological decision making, which won them a Nobel Prize in 2002, suggests that there are two types of decision making: system 1 and system 2.⁵ Kahneman and Tversky argue that system 1, or 'intuitive' decision making, describes the way in which the human brain makes decisions automatically based on emotions, stereotypes and individual sub-consciousness. On the other hand, system 2, or 'rational' decision making, describes the way in which the human brain makes decisions slowly based on logic, calculations and individual consciousness. There is no superior system of decision

making. Both of these decision making systems must be addressed in order to enhance the decision making ability of New Zealand Army personnel.

Professors Dr Lachow and Mr Gompert, from the Center for Technology and National Security Policy and National Defense University, argue that enhanced decision making in the military will require a combination of more timely reasoning (rational decision making) and more reliable intuition (intuitive decision making). The former (exemplified by the Military Appreciation Process) has the advantage of being rigorous and repeatable (and thus more easily communicated to others), however, it is often time-consuming. The latter (intuitive decision making) is well suited for urgent, complex and ambiguous situations and relies upon pattern matching and/or extrapolation (usually subconsciously) from prior experience.⁶ If prior experience is either missing or irrelevant, then the utility of this approach is diminished. It is axiomatic, then, that both rational and intuitive decision making have their place in the military. This combination of rational and intuitive decision making is what Lachow and Gompert refer to as 'Battle Wisdom', and this is how the two systems will be referred to within this paper from hereon.

By way of substantiating the Battle Wisdom theory, Figure 1 examines how much 'weight' New Zealand Army personnel put on rational and

intuitive decision making when operating within complex, chaotic and ambiguous environments. The survey was completed by 25 personnel from across Army who were randomly selected from the Regular Force and Reserve Force, including both Commissioned and Non-Commissioned Officers (Private through to Brigadier ranks). All those surveyed were provided with identical surveys and asked to indicate how likely they are to rely on their rational and intuitive decision making when making decisions under certain conditions. After averaging out the results, the survey showed that participants are more likely to rely on their rational thought process than their intuition. More importantly, however, is the fact that New Zealand Army personnel rely heavily on *both* decision making systems. The following sections will take this knowledge and apply it against the areas of recruiting, training, education and technology.

Recruiting

The New Zealand Army must attract, and ultimately recruit, the right people who are capable of making the best decisions in the future – a future full of complexity. Improving the New Zealand Army's recruiting practises is anticipated to reduce its education and training lines of effort in the long-term by ensuring that all those who enter the service already possess a developed level of Battle Wisdom. On that note, this section will

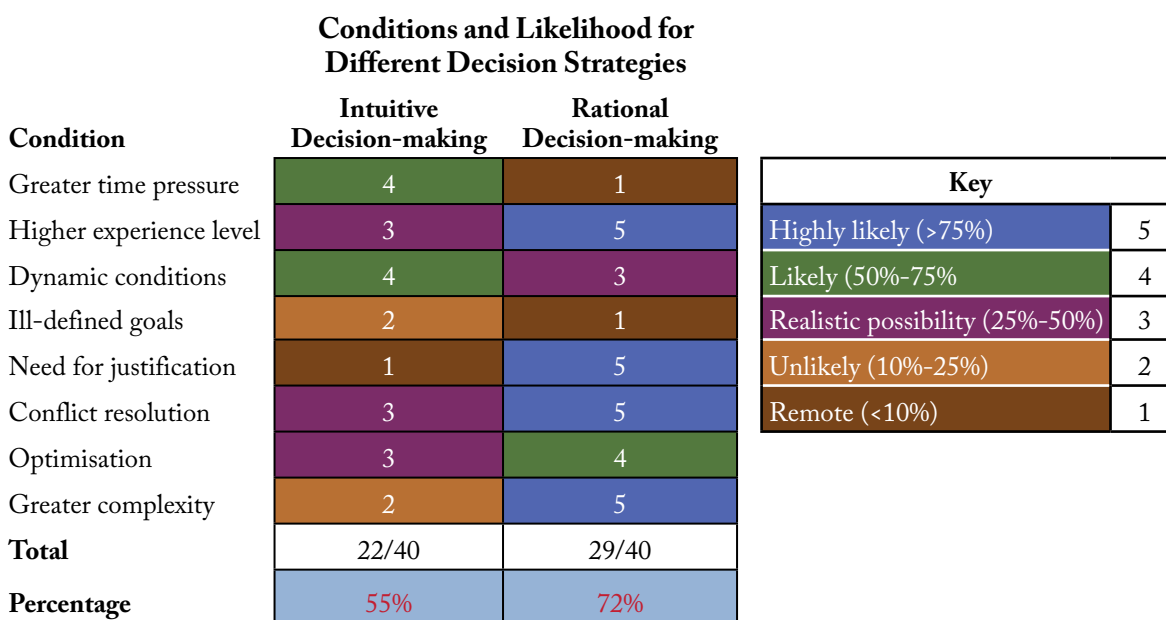


Figure 1: Intuitive and Rational Decision-making Weighting

examine the New Zealand Army's recruiting practises and subsequently provide suggestions that can be adopted in order to improve the Battle Wisdom of all its personnel.

If the New Zealand Army wants to become an organisation full of problem solvers, whose personnel exhibit Battle Wisdom, it should revisit the *why* behind recruiting. At present, recruiting is designed to meet targets and subsequently help fill capability gaps within the New Zealand Army trades. There is certainly good reason for this. However, the age old dilemma of quality versus quantity persists. Quantity is a quality in and of itself, yet the introduction of new technical growth areas such as cyber and robotics demand a qualitative workforce. Even the Infantry, who have the lowest entry standards, will soon operate Unmanned Aerial Systems at the tactical levels. These technical growth areas will require recruits who can intuitively operate complex systems and/or have the capacity to learn. Why, then, is the New Zealand Army still primarily focused on meeting targets alone? Why not shift the focus to first identifying personnel who possess Battle Wisdom qualities in these growth areas?

The current recruiting system determines whether an individual is cognitively fit to join the New Zealand Army through a series of aptitude tests. Although these tests are necessary to assess basic numeracy and literacy (thus supporting the measurement of one's rational decision making), they fail to account for learned knowledge (intuitive decision making). By focusing on an individual's Battle Wisdom qualities (both rational and intuitive decision making), it is anticipated that recruiting will, over time, deliver an organisation full of problem solvers irrespective of what trade personnel end up in, and the following strategies can help achieve this effect.

First, the New Zealand Army should continue to promote its semi-agnostic approach to recruiting. Semi-agnostic recruiting is a term used to describe the condition of providing personnel with greater flexibility when selecting their future career paths. For example, in a recent case, an individual was recruited as a Communications Systems Operator and after Corps Training found that they were better suited to Electronic Warfare (EW) based on their previous work history in information technology. This particular individual was ultimately given an opportunity to change trades, subject to EW capacity and security requirements, and the

service was better for it. In theory, a semi-agnostic approach to recruiting will provide personnel with greater flexibility in their military careers, thus increasing the likelihood that they will have prior knowledge (supporting their intuitive decision-making) and/or possess a greater interest in their preferred trade (thus a willingness to develop their rational decision-making).

Second, the New Zealand Army can further enhance its recruiting practises by refining its lateral recruiting efforts. Lateral recruiting acknowledges that the private and public sectors provide matured skills that the military rarely teaches to its recruits. For example, lateral recruits from the New Zealand Police or Fire Service are likely to provide significant utility to the New Zealand Army during population-centric operations based on their experience dealing with civilian populations. The challenge, however, is working alongside the New Zealand Army's existing career model so as to not disadvantage current personnel from moving up within the organisation. The future force should therefore consider a percentage of the force to choose lateral progression (strength and passion) over a vertical rank focus (titles and tenure).⁷

Finally, the New Zealand Army should review its psychometric testing criteria to ensure future recruits are tested for Battle Wisdom qualities. As discussed, recruiting smarter means first identifying individuals who possess strong rational and intuitive decision making abilities and then, as a secondary effect, take them through the recruiting process. If psychometric testing can determine whether an individual possesses Battle Wisdom early on in the recruitment process, it will provide an additional buffer to current recruiting strategies. This approach will instil a sense of confidence that those who are being recruited into the New Zealand Army will one day be more likely to make better decisions when it matters.

In summary, if the New Zealand Army wants to attract, and ultimately recruit, the right people who are capable of making the best decisions in the future, it is paramount that the service revisits the *why* behind recruiting.

Education

The future of the New Zealand Army will be decided by its serving men and women who are competitively climbing up the ranks into positions

of greater responsibility. To enable these individuals to make the best decisions for the greater good of the organisation, it is important that the New Zealand Army enhances its educational initiatives in order to provide the necessary tools to develop their Battle Wisdom qualities going forward into the future.

It is anticipated that over the next two decades the education sector will see revolutionary developments, including, but not limited to, improvements in education-enabling technologies, greater study options and a change in the way information is taught to learners. From a New Zealand Army perspective, this will likely involve leveraging technologies such as advanced simulators, introducing new study options as future operating environments and global actors become increasingly complex; and will see conventional seated classrooms replaced with digitised ones (i.e. relying upon virtual and augmented reality technologies). Indeed, educational advances over the next two decades will be both exciting and challenging. It is for this reason that the New Zealand Army must remain agile in its approach to education if it intends to leverage these anticipated developments and subsequently provide a learning climate where all its personnel can develop their Battle Wisdom qualities.

These anticipated educational developments will stand to improve the learning ability of all New Zealand Army personnel, however, before these developments can be exploited, it is important to first identify the existing educational gaps within the organisation. These gaps are observed to include the civilian/military divide and the way in which military personnel are cognitively prepared for future operations.

As the Total Defence Workforce framework suggests, there will be an increasing number of civilians working for the New Zealand Army in the future. These civilian personnel will be responsible for conceptual, strategic and even tactical decision making that will have a profound impact on the way the New Zealand Army does business. If civilian and military personnel are not singing from the same sheet of music – if they are not aligned in the way they approach military matters – then there will almost certainly be a risk of organisational fragmentation.

Generally speaking, military personnel are indoctrinated into the New Zealand Army where they are taught to think rationally (exemplified by the Military Decision Making Process), whereas civilian personnel are brought into the organisation latterly based on prior experiences from previous jobs and/or their tertiary education, bringing with them a range of experiences that may provide the Army with an external perspective on military matters. This perspective is often beneficial, especially at the conceptual and strategic levels. However, civilian personnel who possess an external, and therefore potentially ignorant, perspective on military matters could also harm the organisation. A way to mitigate this perceived risk is to offer civilian personnel with a military induction course to better indoctrinate them into the organisation's way of thinking. That is, an induction programme that includes an overview of New Zealand Army capabilities (i.e. weapon systems and vehicles etc.), military rational decision making (i.e. taught the Military Appreciation Process), Ngati Tumatauenga (i.e. a visit to The New Zealand Army National Marae), and New Zealand Army core ethos and values (i.e. courage, commitment, comradeship and integrity). An induction course such as this will provide civilian personnel with the necessary military exposure that will enable them to better understand military matters and subsequently help close the military/civilian divide.

The New Zealand Army currently prioritises the education of its personnel toward conventional combat operations. It is, after all, what the New Zealand government expects of its Defence Force. However, recent global trends suggest that the New Zealand Army will be engaging in less conventional combat and instead find itself supporting more population-centric operations in the future. Population-centric operations, as defined by the New Zealand Army's *Future Land Operating Concept 2035*, include Population Support, Population Protection, Capacity Building and, to a certain extent, Information Activities.⁸ These operations call for different skills than that of conventional combat, which is how the current education system is still primarily orientated. While many basic leadership skills carry over from conventional combat to population-centric operations, the latter calls for more patience, and political and cultural sensitivity.⁹ Part of the problem is that the decision making styles involved in population-centric operations may be quite different from

those used in a combat situation. Therefore, it is important that the New Zealand Army considers readjusting its current education framework to give emphasis to cultural and socio-political nuances, particularly pertaining to South Pacific nations.

In summary, it is evident that, over the next two decades, New Zealand Army personnel will be found in increasingly complex environments. The character of these environments will place greater cognitive pressures on personnel to make complex decisions in a timely manner that can have lethal implications and severe penalties for getting it wrong. Therefore, if the New Zealand Army wants to ensure that its future leaders are equipped with the right cognitive tools to make the best decisions for the greater good of the organisation, and maximise the utility from the anticipated developments in the education sector, it must first address the identified gaps, namely the military/civilian divide and the way in which military personnel are cognitively prepared for future operations.

Training

Training will remain critical to enhancing the Battle Wisdom of all New Zealand Army personnel. The convergence of both systems (intuitive and rational decision making) will be required in a future where complexity, chaos and ambiguity will become (and arguably already are) the norm. To succeed in the future, New Zealand Army personnel must be able to think both intuitively and rationally. The challenge, however, is how to provide personnel with cognitive training that develops both their rational and intuitive decision making, and ultimately prepares them for the complexities of the future.

The Military Appreciation Process already provides military personnel with a tool to make rational decisions, yet the New Zealand Army does not have a formal process that 'teaches' intuition. Immediately, it becomes clear that developing the intuition of New Zealand Army personnel is going to be much more challenging. This is because intuitive decision making relies upon pattern matching and/or extrapolation (usually subconsciously) from prior experience. The question, then, becomes: How can the New Zealand Army provide its personnel with the most accurate experiences that will reflect the complexities of the

future operating environment and subsequently develop their intuitive decision making?

The answer is simple and is best articulated by General Martin E. Dempsey, Chairman of the Joint Chiefs of Staff, who argues that "if the environment in which we operate is more chaotic, we've got to introduce chaos into the system".¹⁰ In other words, in order to develop the intuition of its personnel, the New Zealand Army must focus on training that reflects the complexities of the future operating environment. Developing the intuition of such personnel will require the New Zealand Army to set the right environmental conditions (i.e. chaos, ambiguity and complexity) to enable these personnel to expand on their personal experiences. Providing an opportunity to come face-to-face with chaos and ambiguity will create personal experience that can be later reflected upon in similar circumstances (i.e. when conducting real and potentially life-threatening operations). The United States Army concurs by suggesting that "the increasing uncertainty of the future operating environment requires soldiers and civilians who are not just comfortable with ambiguity and chaos, but who improve and thrive in even the most difficult conditions. As these conditions grow more complex, the demand for creative and critical thinkers also grows".¹¹

If the future requires personnel to do new and much more complicated cognitive tasks more rapidly and for longer continuous periods than ever before, it is important that the New Zealand Army prepares them accordingly. It is for this reason that the New Zealand Army should explore alternative methods of training that change the demands on its personnel that cannot be facilitated by traditional kinds of training, such as unscripted training. Unscripted training can be described as the process of randomising training so that personnel are forced to become agile and adaptable in their thinking. For example, imagine randomly selecting aspects from each of the following categories:

- » Coalition assets (air strike capability, cyber effects, artillery and naval support etc.).
- » Geographical area of operation (New Zealand and its environs, South Pacific, Australia and the Asia-Pacific region).
- » Human terrain (civilians, police, insurgents, private security and militia etc.).

- » Threat level (very low – very high).
- » Type of Integrated Land mission (Population Support, Population Protection, Joint Land Combat, Capacity Building or Information Activities).

Now consolidate these aspects into a proposed training scenario and provide it to an appropriate military scenario director to execute. In effect, what this does is that it forces the scenario director and the scenario participants (i.e. Army personnel, among others) to be agile and adaptable in their thinking when training, thus actively developing the intuitive thought process of all those involved. Actively practising unscripted training across the New Zealand Army will theoretically provide personnel with an opportunity to draw on their learned experiences and, as a result, enable them to make informed, intuitive decisions in the future.

While unscripted training provides an excellent opportunity for personnel to develop their intuitive decision making in the long-term, it is unlikely to provide personnel with experiential training required for operations in the immediate future. Highlighted by the current operation in Iraq, personnel will still require traditional kinds of training that can deliver the necessary short-term experiences and skills required for a *known* operating environment. The New Zealand Army cannot focus on unscripted training alone. Therefore, the future of training will require the New Zealand Army to provide its personnel with both scripted and unscripted training packages designed to improve their Battle Wisdom in the immediate future, as well as in the long-term.

In summary, training will remain a key driver to enhancing the cognition of New Zealand Army personnel and, by practising both unscripted and scripted training, the New Zealand Army will be in a better position to provide its personnel with the right experiences to draw upon when operating in the immediate future, as well as in the long term.

Technology

Technology has enabled us to move faster using cars, lift heavier using cranes and even fly through the air using airplanes. Technology has quickly penetrated into activities in the daily life of ordinary

people but, until recently, there has been little applied research within the New Zealand Army that looks at ways in which technology can enhance the Battle Wisdom qualities of its personnel.

Technology alone can not achieve success in the land domain. Cognitive-enhancing technologies such as simulators, Global Positioning Systems (GPS), auto-pilots and calculators have made tasks easier than ever before, however, they also degrade basic cognitive skills. Therefore, if the New Zealand Army intends to provide a world-class operationally focused land component as part of the Joint Force that is led, trained and equipped to win in the future, it is important to continue to provide its personnel with basic soldiering skills, such as navigation, in order to mitigate the risk of becoming over-reliant on technology. In the same way that both rational and intuitive decision making must be treated as mutually inclusive, technology and basic soldiering skills must also find an equilibrium if the New Zealand Army is to enhance the Battle Wisdom of its personnel going forward into the future.

With that said, technology and science can certainly improve the cognition of human beings if used correctly. In fact, leveraging technology and science in order to enhance the cognition of humans is, on an international scale, commonplace and such endeavours are anticipated to become increasingly sophisticated into the future. For example, in 2014 a trial to investigate whether stimulating the brain with a mild electrical current can improve the performance of military personnel was successfully performed at the Wright-Patterson Air Force Base near Dayton, Ohio.¹² Even the New Zealand Defence Force has shown a keen interest in the benefits of science and technology to enhance the cognition of its personnel by conducting a trial in 2007 to determine the cognitive effects caffeine had on troops.¹³ This noticeable increase of cognitive enhancing trials suggests that the New Zealand Army should, at a minimum, expand its communication channels with its internal and external partners in order to leverage successful and, most importantly, safe cognitive innovations for the benefit of its personnel.

Since the increase in trial frequency, successful cognitive-enhancing technologies have become much easier to identify. These include:

Nootropics, otherwise known as ‘smart drugs’ or neuro enhancers, are substances that enhance learning and memory, while being extremely safe and protective of the brain.¹⁴ Nootropics include vitamin E, vitamin B12, Omega-3 oil, ginkgo biloba, caffeine and Modafinil, among other things.¹⁵ The potential benefits that nootropics offer should be explored further to determine their suitability to be integrated across New Zealand Army recruiting, education and training practises.

Standalone technologies are technologies that are not directly integrated with the human brain, but nevertheless provide cognitive advantages. Standalone technologies include advanced simulators, GPS and computing (both mobile and fixed) systems, among other things. Although these technologies may only compliment rational and intuitive decision making, their emergence, particularly advanced simulators, is projected to provide utility for the New Zealand Army in both the training and education space. If present-day simulators, such as the Army’s Weapon Training Simulator, already provide a platform that is capable of imitating specific operational circumstances, future simulators will almost certainly provide greater flexibility in the way training is conducted.¹⁶

Human augmentation refers to technologies that enhance human productivity or capability, or that somehow add to the human body. Human augmentation may include hearing aids, telescopic contact lenses, memory restoring brain implants and electromagnetic neuro pulses, among other things. In the context of human cognition, human augmentation sets out to enhance the natural sensory abilities of human beings, such as hearing and sight, and is anticipated to see the most growth going forward into the twenty-first century.

So what? Ultimately, it will be the amalgamation of nootropics, standalone technologies and human augmentation that will stand to enhance the cognition of New Zealand Army personnel. It is anticipated that the amalgamation of these technologies will drive the development of human enhancement in the future, and the Australian Defence Force (ADF) agrees. In their 2014 *Future Warfare Report*, the ADF states that the future “land force will need to develop a better understanding of enhancing human capabilities with, for example, improved human-machine

interfaces or better fusing of technology with biology”.¹⁷ To contextualise this concept, visualise a soldier helmet system lined with electromagnetic neuro pulses (human augmentation) that actively reduces fatigue and heightens awareness, with integrated hearing aids (also human augmentation) that further improves situational awareness, and a modular visual computing system (standalone technology) that monitors vital signs and, when required, automatically administers Modafinil (nootropics) to rapidly boost cognitive performance. Indeed, this concept may resemble something out of a science fiction novel; however, in reality work is already being done in this space by the United Kingdom’s Future Soldier Vision programme.¹⁸

Advances in neuroscience and technology could lead to the mind becoming the ultimate weapon.¹⁹

Corneliu Giurgea, the psychologist who coined the term ‘nootropics’, perfectly summarises the need for cognitive enhancing technologies by stating that “man will not wait passively for millions of years for evolution to offer him a better brain”, and neither will the insurgents of tomorrow.²⁰ Therefore, if the New Zealand Army intends to provide a world-class operationally focused land component as part of the Joint Force that are led, trained and equipped to win in the future, it must provide its personnel with a cognitive-edge, and technology can help to achieve this effect.

Conclusion

In conclusion, this paper sets out to examine the idea that the New Zealand Army can realistically enhance the cognition of its personnel in order to make better decisions and, in turn, positively influence the outcomes of future operations. This can be achieved by applying the principles of the Battle Wisdom theory, which argues two distinct types of human decision making, across the areas of recruiting, education, training and technology. Applying the Battle Wisdom theory across these areas will see to it that the New Zealand Army will recruit cognitively equipped individuals with a greater capacity for learning; education will improve civilian/military cooperation and better prepare its personnel for both conventional combat and population-support operations; unscripted training will breed a new generation of intuitive thinkers with a true ‘Number 8 Wire’ approach to problem

solving; and technology, applied across the areas of recruiting, education and training, will ultimately complement these efforts to provide maximum benefit in the pursuit toward creating a world-class

operationally focused land component as part of the Joint Force that are led, trained and equipped to win in the future.

Endnotes

- 1 United States Army Combined Arms Center. 2014. *The Human Dimension White Paper: A Framework for Optimizing Human Performance*. Fort Lesley J. McNair, Washington, DC: United States Army Combined Arms Center, Headquarters United States Army.
- 2 Finney, N. 2014. *Re-Grading the Army's #Human Dimension White Paper*. Retrieved from: <https://medium.com/the-bridge/regrading-the-armys-human-dimension-white-paper-bd282c366fa8#gzjfj02okw>
- 3 The twenty-nine deployments include: Afghanistan, Antarctica, Australia (bushfires), Bahrain, Banda Aceh and Medan (Indonesia), Bosnia-Herzegovina, Bougainville, Cambodia, Dubai (UAE), Egypt, Fiji, Iraq, Jerusalem (Israel), Korea, Kosovo, Lebanon, Mozambique, Port Moresby (Papua New Guinea), Samoa, Sierra Leone, Solomon Islands, Somalia, Sudan, Syria, Timor-Leste, Tonga, Vanuatu and Yugoslavia.
- 4 Gompert, D., I. Lachow, and J. Perkins. 2005. *Battle-Wisdom: Improving Cognitive Performance in Network Centric Warfare*. Fort Lesley J. McNair, Washington, DC: National Defense University Center for Technology and National Security Policy.
- 5 Kahneman, D. 2002. *Maps of Bounded Rationality: A Perspective on Intuitive Judgement and Choice*. Princeton, NJ: Princeton University, Department of Psychology.
- 6 Gompert, D., I. Lachow, and J. Perkins. 2005. *Battle-Wisdom: Improving Cognitive Performance in Network Centric Warfare*. Fort Lesley J. McNair, Washington, DC: National Defense University Center for Technology and National Security Policy.
- 7 New Zealand Army. 2017. *Future Land Operating Concept 2035*. Wellington, New Zealand: HQNZDF.
- 8 New Zealand Army. 2017. *Future Land Operating Concept 2035*. (2017).
- 9 Johnson, D. 2002. *Preparing Potential Senior Leaders for the Future: An Assessment of Leader Development Efforts in the Post-Cold War Era*. Santa Monica, CA: Rand Corporation.
- 10 Brafman, O. and J. Pollack. 2013. *The Chaos Imperative: How Chance and Disruption Increase Innovation, Effectiveness, and Success*. New York, NY: Crown Publishing Group.
- 11 United States Army. 2015. *The Army Human Dimension Strategy*. Fort Lesley J. McNair, Washington, DC: Department of the Army, Headquarters United States Army.
- 12 Young, E. 2014. *Brain Stimulation: The Military's Mind-Zapping Project*. Retrieved from: <http://www.bbc.com/future/story/20140603-brain-zapping-the-future-of-war>
- 13 McLellan, T. M., G. H. Kamimori, D. M. Voss, C. Tate, and S. J. Smith. 2007. "Caffeine Effects on Physical and Cognitive Performance During Sustained Operations." *Aviation, Space, and Environmental Medicine*. 79(9): 871-877.
- 14 Mental Health Daily. 2015. *Potential Dangers of Nootropics: What to Consider Before Using Smart Drugs*. Retrieved from: <http://mentalhealthdaily.com/2015/03/02/potential-dangers-of-nootropics-what-to-consider-before-using-smart-drugs/>
- 15 In the U.S., Modafinil has been given to Air Force personnel since the 2003 Iraq invasion to reduce fatigue and promote wakefulness. Saletan, S. 2013. *The War on Sleep: There's a military arms race to build soldiers who fight without fatigue*. Retrieved from: http://www.slate.com/articles/health_and_science/superman/2013/05/sleep_deprivation_in_the_military_modafinil_and_the_arms_race_for_soldiers.html
- 16 Advanced simulators are already available, such as VOID, which incorporates 4D technologies that integrates physical infrastructure with virtual software, providing the user with infinite possibilities. Although 4D technology is primarily designed for gaming, it is projected to have a military application in the future.
- 17 Australian Army. 2014. *Future Land Warfare Report*. Canberra, Australia: Modernisation and Strategic Planning Division; Australian Army Headquarters.
- 18 Mizokami, K. 2015. *The U.K. Unveils Its Soldier of the Future*. Retrieved from: <http://www.popularmechanics.com/military/research/news/a17435/the-uk-unveils-its-soldier-of-the-future/>
- 19 Young, E. 2013. *Advances in neuroscience and technology could lead to the mind becoming the ultimate weapon*. Retrieved from: <http://archive.cosmosmagazine.com/features/killer-instinct/>
- 20 Giurgea, C. 1981. "Fundamentals to a Pharmacology of the Mind." *American Lecture Series* 1041.





CONFIGURING THE COMBAT ARMS: SOUND INSTITUTIONS, SMART ORGANISATIONS AND A UNIFIED CULTURE

By Major Maia Baker

Major Maia Baker is the Senior Instructor Command and Tactics at Combat School, Training and Doctrine Command (New Zealand).

A Theory of Evolution

Why is it that every time a red-tabber clears his throat, those lieutenant colonels all think they need to run around changing things?

Anon.

Armies must evolve. With the rest of the world continually changing, it is naïve to think that we should never have to. The way we are organised, the equipment we use and the ways in which we train and fight must continually be tested and adjusted against the outside world to ensure that we remain credible and relevant. It is not easy to define the Army's task environment, but we must remain abreast of developments in military technology, our preferred coalition partners, our possible enemies, New Zealand's strategic objectives and myriad other factors. Effective change is not just about responding to the environment. It is also about configuring the organisation to be better at adapting to new threats and opportunities as they arise. Effective change sets the conditions for continued adaptation and improvement, while poorly designed or managed change can inhibit our ability to evolve.

The New Zealand Army embarked on two major change projects in the 1990s. The Logistics Regiment Amalgamation saw the units responsible for distribution, supply and maintenance brought together within a single corps and regrouped into logistics battalions. This endeavour, while initially limited in scope, engendered greater cohesion,

expanding capabilities and new opportunities for growth. Compare this to the Motorisation Project, which saw the procurement of New Zealand Light Armoured Vehicles (NZLAV) and the transformation of the infantry battalions from light to motorised infantry. This undertaking was conceived with high aspirations, but only partly implemented and eventually reversed, leaving the combat arms fragmented and, in many ways, less capable than before.

The Army is embarking on a new phase of transformation. The *Future Land Operating Concept 2035 (FLOC 35)*, the Network Enabled Army Programme (NEA) and the Protected Mobility Capability Project (PMCP) each have the potential to fundamentally change the way we do business. Now is a good time to draw lessons from our recent history and identify how we can manage change in a way that sets the conditions for greater cohesion, growth, innovation and adaptability.

The Motorisation Project

The Army was sent to Bosnia with armoured personnel carriers from the Vietnam War and those men were endangered.

Helen Clark, 4 November 1998

The aim of the Motorisation Project was to create a modern, credible combat force that could make a meaningful contribution to multinational operations in a high threat environment. The two main lines of effort were the transformation of the infantry battalions from light to motorised infantry, and the replacement of the Army's obsolete fleet of armoured personnel carriers (APCs) and tracked reconnaissance vehicles.

Mechanised infantry had recently emerged in other western militaries, proving its worth during Operation Desert Storm. The Army followed this path with the deployment of Kiwi Company to Bosnia in 1994. This was New Zealand's largest deployment for several decades, and its first peacekeeping operation in a theatre where the threat factions were well equipped with modern weapons and armour. The APC lift model was discarded; instead, the rifle company was rerolled as mechanised infantry. Platoon and section commanders were hastily trained to operate their assigned M113s.

The Bosnia deployment was strategically very successful. Kiwi Company was assigned an area of operations 12.5 times larger than a light infantry battalion would normally be given. Nevertheless, the vehicles were outdated, slow and under-protected. The British formation commander in overall command of Kiwi Company viewed them as a significant tactical risk (Greener, 2009).

This deployment showed that the NZ Army, with its current equipment types and method of operation, would be incapable of operating effectively in anything other than a benign environment, without imposing significant risk on the wider force within which it would work."

Cabinet, 1999: Motorisation of the NZ Army, p. 3

The 1997 Defence White Paper emphasised the lessons learned from Bosnia. The Army needed to modernise if New Zealand was to continue to participate in multinational peacekeeping operations. Rather than retaining the segregated regimental structure, the infantry battalions would be equipped with armoured vehicles and Queen Alexandra's Mounted Rifles (QAMR) would be disbanded. Wheeled vehicles were seen to offer greater operational agility than tracked vehicles, and the Army settled on a modified form of LAV III to replace the M113.

Motorisation was only partially implemented; however, where it was applied, the capability developed steadily. NZLAV was purchased in 2003 and the majority of soldiers and officers within QAMR were reassigned to 1st Battalion, Royal New Zealand Infantry Regiment (1 RNZIR). LAV Company was established with the role of providing APC lift to the rifle companies. In 2004, the decision was made to not motorise 2/1 RNZIR, which would remain a light infantry battalion. In 2005, LAV Company was disbanded

and the vehicles and crews were reassigned to the rifle companies in order to achieve greater integration. The remnants of QAMR, by this stage only a handful of personnel, were shifted from Waiouru to Burnham and re-designated Queen Alexandra's Squadron. Here they were collocated with 2/1 RNZIR and given the roles of formation reconnaissance and APC lift. In October 2005, 1 RNZIR achieved its final milestone on Exercise Silver Warrior, marking the successful motorisation of the battalion.

In 2006, 1 RNZIR deployed a company group to East Timor on peacekeeping operations. Although this was a light infantry deployment, infantry and crews deployed together as 'cavalry sections', emphasising the unity of the force. Infantry and armoured corps soldiers had by now been undergoing combined corps training for several years. In 2007, the first Cavalry Platoon Commanders Course was delivered, producing combat arms officers with both the command and technical skills required to manoeuvre up to six NZLAVs and 30 infantry soldiers. In 2010, NZLAV was deployed to Afghanistan in support of NZ Special Forces before being reassigned to Operation Ariki until 2013.

The beginning of the end came in 2012 with the re-establishment of QAMR. Queen Alexandra's Squadron was relocated from Burnham to Linton Camp, and raised from a squadron to a regiment. Whiskey Company, 1 RNZIR was reassigned to QAMR along with the battalion's entire complement of NZLAV. 1 RNZIR reverted to an under-strength light infantry battalion. In 2014, the Army rationalised the combat arms, reducing the infantry component in favour of indentured support trades. The infantry were reassigned from QAMR to 1 RNZIR, with the intention that their number would be reduced by attrition over the coming years. The force structure now adopted by the combat arms closely resembled that of the 1990s.

After 12 years, the Motorisation Project had ended in failure. The Army simply didn't configure itself to field the force that had been conceived in 1998. Although sufficient vehicles had been procured to enable the motorisation of two manoeuvre units, this potential was only partially realised. The integration of infantry and light armour had been reversed, degrading the Army's ability to generate effective combat force elements for high end operations. The two key components of the manoeuvre capability were once again segregated along regimental lines.

The Logistics Regiment Amalgamation

Before 1996, the Army's sustainment functions were provided by three separate regiments: the Royal New Zealand Corps of Transport, the Royal New Zealand Army Ordnance Corps and the Royal New Zealand Electrical and Mechanical Engineers. The decision to amalgamate was not grounded in any particular operational developments. The other ABCANZ (America, Britain, Canada, Australia and New Zealand) members had gone through a similar process, albeit in various ways, over the past several decades. Amalgamation was in part a matter of following suit. It was also seen as a way of gaining efficiencies and setting the conditions to shift focus from garrison support to operational outputs.

In December 1996 the Royal New Zealand Army Logistics Regiment (RNZALR) was formed. The three separate regiments were disestablished and the existing units were amalgamated into logistics battalions. The RNZALR adopted standard dress accoutrements and all of the support trades came under the same corps. Distribution, supply, maintenance and other sustainment functions were now integrated at unit level rather than formation level.

During the last ten years, the RNZALR has taken steps to adopt a more operational focus. This has included the civilianisation of various garrison support functions, including catering, clothing supply and workshops. The combat service support team (CSST) model was developed, which allowed the logistics battalions to field company sized multi-functional logistics groups in support of task group operations. Platoon strength combat logistics patrols (CLPs) are also under development. In a move to operationalise the transport trade and enable capabilities like the CLP and CSST, the RNZALR has established the Combat Driver trade. These advances show a clear alignment between operational outputs, organisational structure, doctrine development, collective training and trade models. The RNZALR is well postured to take advantage of any opportunities that may arise, such as the procurement of a new fleet of operational vehicles.

So What?

The success of the Logistics Regiment Amalgamation and the eventual failure of the Motorisation Project provide evidence for what does and doesn't work when undertaking

transformative organisational change. Change should be phased in a way that acknowledges the lagging yet crucial cultural shift. Architects of change must carefully identify which institutions are to be retained and which to be replaced. Large corps require headquarters that have the stability and resources to do the business of translating strategy into action. Like capabilities should be grouped together at unit rather than formation level, and these units require balance, mass and utility. The sections below look into these lessons in more detail.

Phasing Change

It really took us ten years to make decent headway in that space. The regiment has been around for twenty years now, and the first ten years was quite a rough period.

Regimental Colonel RNZALR, October 2016

The logistics amalgamation encountered stiff cultural resistance to begin with, but this waned over the course of the first 10 years as officers and NCOs were either converted to a new way of thinking or replaced through postings and attrition. The real performance gains were made over the second decade: the refinement of CSSTs, the development of CLPs and the establishment of the Combat Driver trade. 1 RNZIR followed a similar progression. Privates, troopers and young officers who lived through motorisation in 2004 became the platoon sergeants, LAV sergeants and company or squadron commanders of 2012 to 2014. Those who could adapt had adapted, and those who couldn't had moved on. The point where the cultural shift had been achieved was unfortunately also the point where the Motorisation Project was terminated.

Military theorists argue that a successful counter-insurgency operation will unfold over decades, not years (or rotations). A new generation must grow up with the stability and institutions that have been established by the occupying force in order for them to take root. The same applies to organisational change. In the Army, a 'generation' could be defined as 10 years: the length of time it takes for a new recruit to become a platoon sergeant, and a freshly commissioned officer to become a company commander. This progression needs to be recognised and factored into transformation projects: restructuring happens quickly, cultural adjustment follows much more slowly, and the real benefits are only realised once that foundation has been set.

Amalgamation vs Hostile Takeover

People didn't buy into it. Those two corps didn't buy into it. As an outsider watching it, it was uncomfortable. It was really uncomfortable. The way they tried to push it through as well, and it just got kind of worse and worse and worse.

Commander TRADOC, October 2016

The architects of the Logistics Regiment Amalgamation appear to have paid close attention to which institutions they would keep and which they would replace. Separate trades were retained to facilitate career management, but this also allowed soldiers to identify with their chosen specialisation. Conversely, the establishment of a new corps encompassed all members without the perception of there being winners and losers – everyone had to adjust. Organisationally, multi-functional logistics battalions were established to replace the existing transport, supply and workshop battalions. These new units allowed for closer habituation and set the conditions for the effective development of CSSTs, while allowing the various trades to remain separated into their respective companies.

By contrast, the Motorisation Project retained separate corps. Within 1 RNZIR, it was clear that motorisation was a takeover, not an amalgamation. The unit kept its name and regimental trappings. The newcomers, now posted from QAMR, were in many cases made to feel devalued, like outsiders. This was exacerbated in 2005 when LAV Company was disbanded and the crews and vehicles were reassigned to the rifle companies. Although greater integration was a worthy goal, the timeline was unnecessarily constricted and this engendered significant resentment amongst many of the crews. There had been no allowance for time to elapse – no opportunity for the development of mutual trust and respect, or the emergence of a shared culture. The resulting attrition among Royal New Zealand Armoured Corps (RNZAC) personnel was so high that it retarded the capacity for subsequent growth.

Corps Review Board Alignment

Infantry has two units, a school, three reserve units, and no personnel dedicated to CRB work. People do it on an as available basis, but they need to prioritise their own work.

Regimental Colonel RNZIR, October 2016

The disestablishment of the corps directorates in the 1990s came with a loss of function that isn't fulfilled by the Army's strategic, operational or formation level headquarters. The Royal New Zealand Army Logistics Regiment (RNZALR) retained this function by binding the appointment of Regimental Colonel to the role of Logistics Commander – Land (LC-L), which is one of very few corps-tied colonels' appointments. The office of LC-L forms the executive of the Corps Review Board (CRB), which meets regularly with the RNZALR unit commanders, chief instructors and senior trade advisors. This enables the RNZALR to present a unified narrative on logistics, and to do the routine staff work and decision-making that is necessary for growing new capability and translating strategic guidance into action.

The combat arms do not have this level of cohesion. RNZIR CRB meetings are infrequent and not always productive. Without a dedicated executive, the RNZIR has limited capacity with which to carry out the essential tasks of translating strategy into action; responding to opportunities and threats; influencing capability definitions; and achieving alignment between outputs, doctrine, training and trade models. The RNZAC is more cohesive due to its smaller size and narrower trade model, but it struggles to define its own place within the wider Army. Coordination between RNZAC and RNZIR has regressed since 2012, and will continue to do so as the current generation of cross-trained officers and NCOs transition out of the regimental environment.

Grouping Capability

Capabilities are integrated by their shared common headquarters. By grouping similar capabilities within the same units, the integration function is pushed down from formation level to unit level. This enables a more balanced and deliberate approach to force generation, prioritising resources and defining training objectives. At the lower levels it engenders closer habituation and creates more opportunities for combined arms training. With the establishment of logistics battalions, this responsibility was lowered from formation to unit level and enhanced the RNZALR's ability to form, train and deploy CSSTs.

As motorised infantry units, 1 RNZIR and, later, QAMR delivered high quality combat team-level training. When infantry and light armour were segregated in 2014, this function was elevated

from unit to formation level and became a whole order of magnitude more difficult to achieve. The same type of training is now initiated at brigade headquarters and involves significantly more negotiation, coordination and uncertainty. Although the responsibility for planning and delivery is often delegated to a unit, none of the combat units house all of the expertise, corporate knowledge and familiarity necessary to plan and deliver combined-arms exercises. Divergent unit priorities and regimental politics can further hinder effective training.

Balanced Structures

The RNZALR benefits from having two units with roughly the same structure and outputs. This balanced structure allows for effective collaboration, prioritisation of resources and a whole range of other organisational efficiencies. This, combined with the permanent CRB, makes for a stable organisation that capably manages its own affairs. During the Motorisation Project, the combat arms remained fragmented into two corps spread across three regular units, each of which had completely different structures and outputs. Priorities, roles and training requirements all differed vastly between units. There was simply no common ground, making it near impossible to cultivate the force in a cohesive way.

None of the land missions that the Army committed forces to since 2002 have reflected the

particular role or structure of any of the combat units; however, they have all involved multiple rotations drawing troops and commanders from each unit. Specialisation limits utility. As a small force, the New Zealand Army’s combat units need to be pretty good at lots of things, rather than experts in a few narrow fields. The combat units need the depth to be able to maintain operational outputs across multiple rotations while continuing to sustain themselves. This is achieved through two measures: mass and a high degree of interoperability between units.

Proposal for Transformation

No one is interested in living through more change. However, the combat arms are following a regressive path that sees them shrinking in size, influence and capability. They are in danger of going the way of the M113: strategically vital, but slow, outdated and under-protected. Now is a good time to apply the lessons of history – ahead of such game-changing endeavours as *FLOC 35*, *NEA* and *PMCP*. The aim is not to adapt to the environment, but to reform the combat arms into a configuration that will make them more adaptable. The proposal outlined below is designed to create the strong institutions, smart organisations and unified culture that will allow the combat arms to evolve in step with modernity.

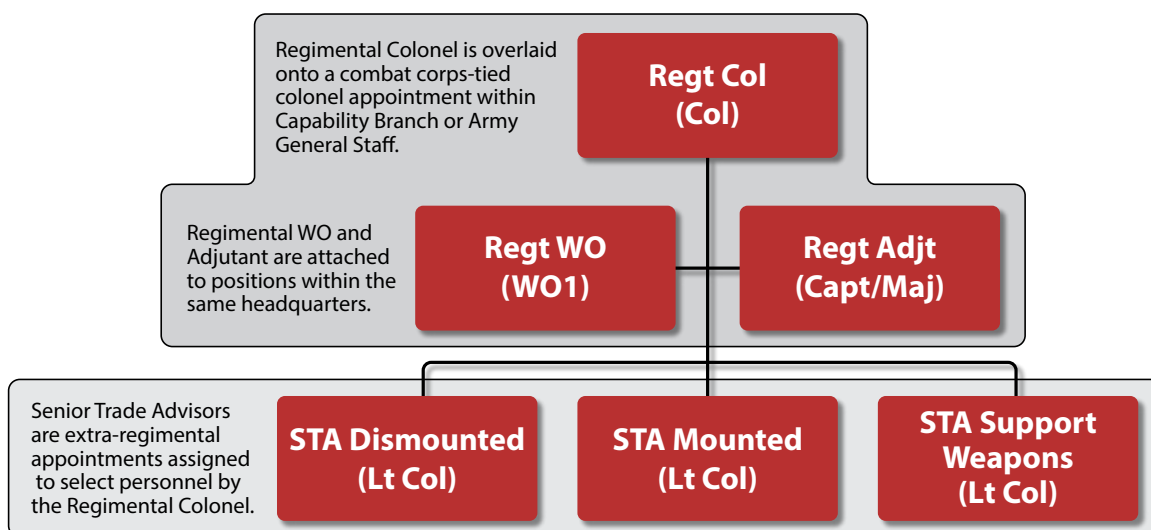


Figure 1. Proposed Combat CRB Structure

Corps structure. Any reformation of the combat arms should be framed as an amalgamation, not a hostile takeover. This makes it necessary for new structures to emerge to replace the old. It is proposed that the RNZIR and RNZAC are amalgamated to form a new corps. Two separate trades would be retained in their current form; however this would not preclude opportunities for cross training or further integration at a later date.

CRB. A combat CRB is the best organisation to properly manage the manoeuvre capability; however it needs to be set up for success. The features listed below would produce an effective corps executive (see Figure 1):

- » An enduring structure and mandate.
- » A combat corps-tied colonel's position in a relevant role.
- » Regular contact with the manoeuvre units and school.
- » Senior trade advisors for mounted combat, dismounted combat and infantry support weapons.
- » Connections with senior leadership within the wider Army and Defence.

There is an obvious requirement for clear delineation between the responsibilities and mandate of the CRB vice the formal chain of command. In essence, where formation headquarters would dictate *what* the school and

units are to deliver, CRB would determine the *how* the force will be shaped. The CRB's mandate would include such functions as refining capability definitions, doctrine development, aligning structures, informing collective training objectives, reviewing trade models and ensuring individual courses are aligned with position requirements.

Unit Structure. Rather than three under-resourced combat units with diverse roles and structures, the New Zealand Army will be better served by two larger units that hold the same capabilities and are responsible for the same outputs. The responsibility for generating and integrating the various manoeuvre force elements would then be held at unit rather than formation level. It is proposed that 1 RNZIR, 2/1 RNZIR and QAMR are reformed into two combat battalions.

In garrison these units would retain companies separated by function to enable administration, personnel management and trade specific training at the sub-unit level. For unit and formation exercises, the CO would have the ability to field up to three combat teams task-organised with a combination of infantry, light-armour, support weapons, reconnaissance, protected mobility, and CSS force elements (see Figure 2).

Labels. The importance of names should not be overlooked. The combat corps and units within it should have titles that are user friendly, describe the capability and inspire pride in the regiment. They should embrace the shared legacies of the

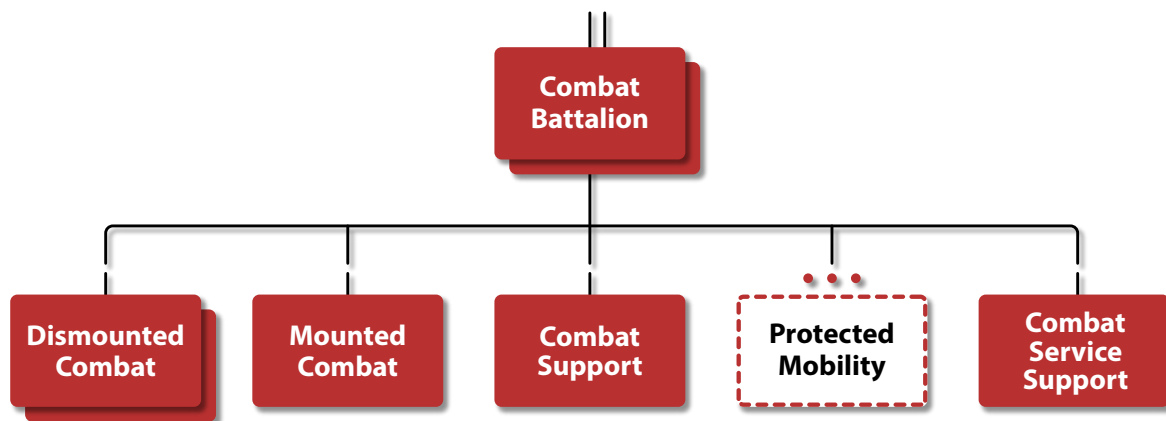


Figure 2. Proposed Combat Battalion Garrison Structure

RNZAC and RNZIR and, at the same time, reflect an amalgamation rather than a hostile takeover. Like New Zealand, the names should be bilingual, working equally well in English and Maori. While the unit designators should be replaced, sub-units could retain titles from the antecedent units. This allows members to identify with their chosen specialisation on one level, and with the new tribe on another.

Implementation. It is anticipated that this transformation would initially be unpopular with most people within the RNZAC and RNZIR. Integration should go no further than is necessary to group manoeuvre capabilities within the same units and provide a unified corps leadership. The necessary cultural shift will follow slowly as a new generation of leaders grows up within the corps. After the new organisation has been normalised, the real performance gains will follow. New capabilities and greater operational focus will emerge from within, rather than being clumsily imposed from without.

Conclusion

By accident or design, the Logistics Regiment Amalgamation was framed and delivered in a way that set the conditions for strategic pathways to emerge, and for new opportunities to be identified

and exploited. The Motorisation Project didn't; rather, it shaped a manoeuvre force that remains confused, fragmented and unwilling or unable to field new capabilities. The lessons are clear, and in many cases reflect the experience of other nations and established management literature. Change can be imposed in short order, but genuine improvements can only follow an attendant cultural shift. There must be a deliberate thought process around which institutions are retained and which are replaced.

The combat arms require dedicated leadership with the mandate and resources to cultivate the force. This leadership needs a manageable organisation, where means and ends are clearly defined and common to all units. A focus on mass and utility, rather than efficiency and specialisation, will allow the manoeuvre force to deliver on its operational outputs, and continue to self-generate, and continue to grow in effectiveness – all at the same time, without breaking our people. While change fatigue is a tangible force, change is inevitable. But rather than further specialisation, the combat arms need to go through a transformation that will set the conditions for sound organisations, strong institutions, collaboration and growth.

References

- Baker, M. "Critical Reflections on Strategy Implementation in the New Zealand Army", (Unpublished Research Paper, Massey University, Palmerston North, New Zealand, 2016).
- Blanken L. J. and J. J. Lepore. 2012. "Unpacking the Various Meanings of Redundancy: from Refining the Concept to Military Planning." *Defense and Security Analysis*, 28(4).
- Cabinet (New Zealand). 1999. *Motorisation of the NZ Army*, Wellington, New Zealand: Ministry of Defence.
- Gul, H. and A. Alican. 2008. "Leadership and Organizational Culture in a Changing Environment: a Generic Approach." *Journal of Strategic Management* 3 (June).
- Greener, P. 2009. *Timing is Everything: The Politics and Processes of New Zealand Defence Acquisition Decision Making*. Canberra, Australia: ANU E Press.
- Mintzberg, H. 1989. *Mintzberg on Management: Inside Our Strange World of Organizations*, New York, NY: The Free Press.
- Pacific Road Group. 2010. *Value for Money: Review of the New Zealand Defence Force*. Wellington, New Zealand: Deane, R.
- Schein, E. H. 2010. *Organisational Culture and Leadership*. 4th ed. San Francisco, CA: John Wiley and Sons.
- Scott, W. R. 1998. *Organizations: Rational, Natural and Open Systems*, NJ: Prentice Hall.
- Selznick, P. 1984. *Leadership in Administration: a Sociological Interpretation*, Berkeley, CA: University of California Press.
- Strebel, P. 1992. *Breakpoints: How Managers Exploit Radical Business Change*, Boston, MA: Harvard Business School Press.



THE ART AND SCIENCE OF TACTICS: THE MILITARY APPLICATION OF CREATIVE AND CRITICAL THINKING

By Major Magnus Latta

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The society that separates scholars from its warriors will have its thinking done by cowards and its fighting done by fools.”

Thucydides

Thinking is mental activity that allows us to understand, plan, reason, solve problems, innovate and make decisions.¹ It is concerned with how we take in, process and utilise information. In the military, it forms a large part of the conceptual component of fighting power.² Military leaders (and their staff) are often faced by unbounded, complex, ill-defined problems with high time pressure and high stakes for failure.³ They must adopt thinking styles and methods that allow them to make appropriate plans and decisions to solve the problems they are faced with.

The situation is further complicated in that military leaders may at various times make complex plans by themselves or in a group; with an extended timeframe or with very little time to consider; about problems they are familiar with or ones that they know very little about; when information is available or when it is scant.⁴ The military professional must be able to recognise how the situation may affect thinking requirements, and to adapt thinking methods as required.

In 2013, Tactical School began a review of the staff and tactics training delivered at the school to commissioned officers in the NZ Army. The review started ‘from zero’, examining the job requirements of officers at Captain and Major levels (in terms of command staff demands and all-arms tactical knowledge).⁵ As part of this, the statement that ‘we train people how to think, not what to think’ was

examined, resulting in the question being asked: ‘How do we want people to think?’ Considerable effort was put into researching and analysing the thinking process in the military, and how best to train it in officers, resulting in a substantial body of information being developed.⁶ Of particular relevance to this article, was the identification of an emphasis across many militaries and corporates on two ‘modes’ of thinking: critical and creative.

The modes of thinking

The modes of thinking describe the purpose behind the thinking. Critical thinking aims to ensure the robustness of information to aid a decision; it is a process of intellectual rigour.⁷ Creative thinking aims to generate new ideas to aid a decision; it is a process of active imagination.⁸ At Tactical School, on the Grade 3 Staff and Tactics course the focus is on developing critical thinking skills, while creative thinking skills are developed on the Grade 2 Staff and Tactics course.

Critical thinking is a mode of thinking in which critical processes are applied to a situation to determine implicit elements as well as the explicit, and to examine the elements, and their soundness. The structure of information and the logic of that structure are examined, so as to form judgements that provide guidance on further actions.⁹ In a military sense, critical thought is essential to ensure decisions are made on objective information and not emotion or unfounded intuition.

Creative thinking is a mode of thinking in which creative processes are applied to a situation to generate ideas to provide novel and original options for further action. This can be through examining a situation through a new or alternate perspective to break preconceptions, adaption of existing aspects to unintended purposes through innovative insight or development of new ideas through invention

and experimentation. In a military sense, creativity enables a commander to achieve surprise and adapt faster to new conditions than an adversary.

The modes are not mutually exclusive: it is a case of critical thinking and creative thinking, not critical thinking versus creative thinking. “[Creative thinking] masters a process of making or producing, [critical thinking] a process of assessing or judging. The very definition of the word ‘creative’ implies a critical component...when engaged in high quality thought, the mind must simultaneously produce and assess, both generate and judge the produce it fabricates. In short, sound thinking requires both imagination and intellectual standards.”¹⁰ Critical thinking also requires imagination to determine what factors may not have been considered.

Critical Thinking¹¹

Critical thinking aims to ensure the robustness of information to aid a decision; it is a process of intellectual rigour. One of the primary functions of command is to make plans, decisions or otherwise solve problems that eventuate. These may be caused by the natural environment, threat elements or hazards posed by military operations. Critical thinking helps to ensure that those decisions or plans are based on the best use of the best information.

In adopting a critical thinking mode, thinking is a search for clarity, precision and accuracy in information, where all aspects of an issue are considered in a non-biased manner so that the conclusions reached are well reasoned, logical and based on evidence. Critical thinking involves analysing and evaluating one’s own thinking and that of others. It examines a problem in depth from multiple points of view and involves determining whether adequate justification exists to accept conclusions as true based on a given inference or argument. Overall, it is an analytical process of ensuring that sound logical reasoning lies behind any information applied to a situation.

Specific behaviours associated with critical thinking include exploring issues and ideas to determine vital questions to answer, both implicit and explicit, and ensuring there is not a bias in the information being presented or used. Defining statements and questions clearly and precisely to provide adequate focus to aid understanding; and gathering and analysing relevant information using abstract ideas to interpret it effectively are also critical actions.

Additionally, evaluating the value and weight of the information, based on an informed judgement of the evidence relating to it; reaching well-reasoned conclusions and solutions, and testing them against relevant criteria and standards; and openly considering alternative systems of thought, are behaviours consistent with critical thinking.

Logic

Logic is a key concept in critical thinking. Logic is defined as reasoning conducted or assessed according to strict principles of validity and soundness.¹² Logical reasoning breaks an argument or line of reasoning down into component parts, known as propositions. Propositions are simply statements that can be true or false, however, in examining logic they will be either a premise or conclusion. A premise is a statement that provides support to an argument’s conclusion. A conclusion is the statement that is the final decision of the argument or line of reasoning.

Logical reasoning is valid if its conclusion logically follows from its premises. Otherwise, it is said to be invalid. Note that the premises don’t necessarily have to be true to have valid reasoning. If they are true, and the reasoning is valid, then the reasoning is also sound. If either of those conditions does not hold, then the argument is unsound. Truth of a premise or conclusion is determined by looking at whether they are in accordance with facts in the real world.

A logic chain is a link from a premise or premises to a conclusion. A conclusion may then become a premise in a subsequent line of argument, creating a chain of logic. Put another way, each premise may be made up of a number of sub-premises. A chain is only as strong as its weakest link, and therefore if any premise is untrue in reality, then the conclusion reached is unsound. This is a flawed logic chain. Similarly, if the conclusion reached does not actually follow on from the premise (even if the premise is true) then the reasoning is invalid, and is also flawed logic.

Logical reasoning can take one of three forms based on the relationship of the premises to the conclusion. The three forms are: deductive reasoning, inductive reasoning and abductive reasoning. Deductive reasoning is reasoning from one or more premises to reach a logically certain conclusion. If correct deductive reasoning is used, and if all premises are true, the conclusion must be true. Inductive

reasoning is reasoning from one or more premises to reach a logically probable conclusion. The conclusion does not follow with any necessity from the premises, meaning it is theoretically possible that the conclusion is untrue, but it is probably true given the premises. Abductive reasoning infers a set of premises as a result of a conclusion. It is therefore acutely prone to fallacy (untruth) because there could be a number of premises.

It can be identified that deductive reasoning is actually relatively rare in military planning given the difficulty in finding out the truth or in getting complete information about the type of complex problems dealt with. Most often inductive or abductive logic is being used instead, sometimes being referred to (wrongly) as deductive. A process of logical reasoning is essential to the military professional to ensure thinking arrives at sound conclusions. A disciplined approach will also identify where risks exist in the thinking, given either the form of thinking that is used or the presence of assumptions in formulating the conclusion. In commonwealth armies, the format most often applied to the discipline of logical thought is the Three Column Analysis or Three Column Format.

Application at Tactical School – the Grade 3 course

On the Grade 3 Staff and Tactics course (Lieutenants transitioning to Captain), the focus is on ensuring sound logic in thinking. The approach taken is that there is no right or wrong answer in military tactics, only answers that are more likely to have sound thought applied to them. Student's tactical solutions are examined on eight criteria¹³ and the student questioned as to their logic in each area. Doing this ensures that the tactical concepts and actions being planned are sound; one cannot have a sound plan without sound logic.

An example of the application of logic to tactics is the use of doctrinal principles. Doctrine is a guide, not a set of rules, and should be judiciously applied as required. Over time, templated solutions to specific problems have been developed that fulfil doctrinal principles relevant in that particular case. There can be a tendency for the application of those templates to become considered as the application of doctrinal principles. However, in some similar problems, elements of those doctrinal principles, or perhaps the way they are applied in the template,

are not relevant. The blind application of a template to a problem is a constraint on precise thinking, so Tactical School now requires students to explain their logic in applying doctrinal principles and the actions that fulfil them. They are allowed to not apply doctrine in cases where there is sound logic behind that choice. This ensures there is critical thought and sound logic behind how students consciously apply doctrine to tactical problems.

The requirement for sound logic extends to the conduct of planning in a staff environment. At Tactical School in the staff planning exercises, the emphasis is on effective information management and student's ability to share relevant information across other staff branches is one aspect that is assessed. This relevant information may be conclusions that have been made in the individual student's own area of planning (for example potential actions by the enemy for students in the intelligence cell) that are required premises for other areas of planning (for example actions within the plan by students in the operations cell). In effect, the students, operating as a staff headquarters, are required to support a logic chain that spans the entirety of the staff branches.

By establishing and making explicit the requirement for sound logic in deliberate planning activities, students are better enabled to conduct intuitive problem solving.¹⁴ The application of intuition to problem solving involves making leaps of logic, essentially moving multiple steps along a logic chain to reach a conclusion faster than if required to work through all the premises sequentially. This is not without risk, but in certain cases the time gained in making decisions faster is worth that risk.¹⁵ In order to reduce the risk, the intuitive process (or system 1 processes) should be based on experience relevant to the situation.¹⁶ By working through decisions at Tactical School, and the logic involved in them, students develop the ability to make intuitive leaps as their experience grows.¹⁷

Creative Thinking¹⁸

Creative thinking aims to generate new ideas to create or aid a decision; it is a process of active imagination. Military forces consistently try to get an advantage over an opposing element. Being able to do unexpected, new and innovative actions enables a military force to achieve an advantage over the adversary. This may be a technical innovation, or a novel tactical course of action, or anything that

achieves an element of surprise over the adversary to which they are unable to react effectively. Creative thinking is also the foundation to adapting to (and solving the problem of) the adversary's innovation.

In adopting a creative thinking mode, thinking is a search for new ideas or approaches, where judgement is suspended to explore possibilities so that many potential options are generated without being constrained by existing paradigms. Creative thinking involves unrestraining one's own thinking and that of others. It explores possibilities within a problem, and linking or associating apparently disparate ideas in a process of continual experimentation and imagination. Overall, it is an exploratory process of developing multiple possibilities, including those aspects original in entirety, combination or application.

Specific behaviours associated with creative thinking include an ability to accept change and newness while not accepting that the status quo is the best or only way, thereby pursuing continual improvement. Additionally, associating ideas or elements across a diversity of fields of thought or skill, developing novel and original insight into issues and problems, and pursuing randomness or deliberately breaking preconceptions and accepted norms are creative actions. Exploring the limits of standard judgements and norms, a willingness to experiment with ideas and possibilities, and acceptance of failures and mistakes as part of the process are also behaviours associated with creative thinking. Finally, creativity also includes elaborating on ideas and concepts to build detail, depth, originality and add value; and evaluating the suitability of ideas and designs to determine the appropriateness and usefulness of them.

Unbounded Thinking

Many of the techniques of creative thinking are about allowing unrestrained, free thought that can explore outside of the boundaries of norms, conventions or standard thinking. It is often self-imposed barriers that inhibit creativity, and therefore a key concept to enable creative thinking is to push beyond those barriers. Often, by looking at issues from alternative perspectives, combining apparently unrelated ideas, or refusing to accept the status quo or common explanations, new concepts are created.

Many of the psychological mechanisms that occur naturally in our thinking reinforce compliance with

norms and inhibit variance, meaning that the mind itself is geared to reduce the ability to be creative in many ways. These mechanisms are known as heuristics and biases.¹⁹ Heuristics are mental rules of thumb that allow us to make the rapid mental calculations that are necessary for quick decisions and responses. They are short-cuts, tried and tested in survival situations, but as they lack rigor they do not work in all situations. They act as a sort of mental anchor that makes it difficult to escape their influence. Biases are intended to create efficiency in thought by predisposing us to give more weight to information that leads us in a desired direction; however, they can be a risk if they lead us in the wrong direction. We are unaware of many of our biases, which contain both innate and learned aspects.

It can take a lot of discipline to overcome those heuristics and biases and exercise unbounded thinking. Specific techniques are taught at Tactical School to assist in this, and the concept of incubation is also taught, which refers to a temporary break from problem solving that can result in insight, i.e. 'sleeping on it'. This break seems to allow the unconscious means of thinking to work, which can assist in breaking down boundaries of thinking. This can be difficult to justify in a time-constrained environment, such as there often is in the military, however, it is important to allow sufficient breaks in conscious thinking and accept that thinking is still occurring at an unconscious level. If ideas are not forthcoming, it is likely to be more productive to stop trying to 'force' them and allow some time for them to incubate.

While many heuristics can be a risk in thinking, one heuristic that is useful to creative thinking is the 'Naïve Diversification' heuristic. Under this heuristic, if asked to make several choices at once we tend to create broader and more distinct options than if making the same type of decisions sequentially. Thus, three courses of action developed simultaneously by a commander (or staff) to answer an operational problem will be more diverse than three developed sequentially.²⁰ A modification made to the Military Appreciation Process as applied at Tactical School attempts to harness the power of this heuristic, and is discussed later in this article.

The specific creative thinking techniques used at Tactical School to assist in overcoming heuristics and biases affecting creative thinking include out-of-box thinking, provocation and reframing. Out-of-box thinking is a technique that forces

alternatives to be generated, in which a 'box' is placed around the concept, idea or piece of information for which alternatives need to be generated. All idea generation after that must assume that the information inside the box is to be avoided or unavailable – this can be particularly useful in a military context where a different, less obvious solution is being sought, as it often is in tactics. The provocation technique involves developing a solution that is so unrealistic that it is ridiculous. This technique is used to 'break through' any barriers to thought and allow radical solutions to be identified, which may then be modified to workable solutions. 'Reframing' refers to looking at a problem from a different perspective, or a different 'frame' of view. In Reversal Reframing, that viewpoint is an opposite one. Alternative Perspectives Reframing adopts multiple perspectives or foci in looking at the problem.

These techniques can be used to generate a broad range of options from which to then develop critically robust solutions. Emphasis is on quantity rather than quality at this stage, any judgement about the value of the options generated should be suspended until it is decided to start re-imposing those boundaries. The discipline required to exercise creative thinking is no less than that which is required for critical thinking. Indeed, in many ways more discipline is required because society at large, and military culture in particular, tends to emphasise critical thinking and de-emphasises behaviours that supports creativity and innovation.

Application at Tactical School – the Grade 2 Course

The Grade 2 Staff and Tactics course is a requirement for Captains transitioning to Major in the New Zealand Army. With the premise that the Grade 3 course will have established a foundation of critical thinking (and logic), the Grade 2 course looks to develop creativity in military solutions. Specific creative techniques are taught, and then the students guided through their application in the Military Appreciation Process.

Early emphasis on supportive and non-judgemental class work aims to promote an environment where creativity is not stifled or shut down. As students on the Grade 2 course are assessed on leading a staff branch, this aspect of leadership behaviour within a command staff environment is an important factor in developing officers that will facilitate novel

and adaptive solutions in the staff environment. In terms of assessing creativity, analysis of training determined that the eight criteria used to assess tactical plans were still valid and could be used to support creativity. For example, a novel approach was more likely to achieve surprise or seize the initiative, a key factor in the 'applies the Manoeuvrist Approach' criterion.

This is not to suggest that 'wild' ideas are sought, as any design student knows creativity must acknowledge the laws of the real world, and so too must the tactical solutions produced on the Grade 2 course. That is why the foundation of critical thinking is so important. The creative and unbounded solutions produced at the early stages are gradually honed using the judicious application of logical reasoning to develop a solution that is both novel and realistic. Anecdotally though (as only one new model course has run) the variety of solutions developed by students is greater than on previous courses, particularly in the staff planning exercises where the application of the creative process results in more distinct courses of action to select from than before.

Critical and Creative Thinking and the Military Appreciation Process

The Military Appreciation Process (MAP) is the doctrinal process that the Army follows when conducting planning. It varies from individual application to group application,²¹ and from Army-centric application to Joint application.²² The core elements in doctrine (in individual application²³) consist of six steps:

- » Mission Analysis;
- » Battlespace Analysis;
- » Threat Analysis;
- » Course of Action (COA) Development;
- » COA Analysis; and
- » Decision and Execution.

In order to facilitate the application of critical and creative thought, Tactical School teaches the process as nine steps, in four stages.

The first stage, framing, sees the problem 'framed' and the scope of required analysis determined. It involves one step – receipt of mission. The receipt

of mission step frames the problem to focus on the key elements of it. In this step critical thinking is used to define the problem, check information regarding own force readiness and analyse timelines. Creative thinking is used by recognising that an unbounded free-thought occurs as the individual is made aware of the situation, and this may result in valuable initial thoughts that should be captured to aid subsequent analysis. This step should also, in both a critical and creative sense, see factors (premises) identified for further evaluation in the analysing stage.

This step is a new addition to the MAP in New Zealand, although similar steps exist in United States²⁴ and British²⁵ armies planning models. It developed from a review of those processes and as a result of analysing what effective problem solvers did anyway. The emphasis on staff planning that was revised recently for training at Tactical School has also required the addition of this step. This was done to formalise a requirement for commanders and chiefs of staff to provide appropriate guidance and focus to their staff when initiating planning.

The second stage, analysing, involves three steps – mission analysis, battlespace analysis and threat analysis.²⁶ The analysis stage is particularly heavy on critical thinking, drawing conclusions relevant to the formation of a plan. Mission Analysis is the process of determining what must be done, including evaluating the available guidance on how it should be done, in order to meet the commander's requirements. Battlespace Analysis is the examination of the physical and non-physical environment in which the mission is to occur. Threat Analysis²⁷ examines the adversary or adversaries in the mission to determine what adversary actions are possible, given their capabilities and the terrain, and identifies vulnerabilities that may be targeted to defeat them. The logical reasoning applied to analysing the different factors in the mission, battlespace or threat is fundamentally critical thinking. However, identifying how those factors create opportunities is a creative aspect, as is identifying all the potential relationships between factors.

The third stage, forming, is where multiple viable options are actually formulated, and involves both creative and critical thinking in action. It consists of four steps – course of action (COA) design, COA

test, COA development and COA analysis. COA design sees multiple COA concepts developed that can achieve the mission and defeat the threat, which are then compared against adversary actions in COA Test. This determines possible reactions and decision by both sides and confirms the viability of the COA for further development in the COA Development step. A fully developed COA is then analysed against the adversary in COA Analysis, culminating with the evaluation and comparison of options for the final step of decision and execution.

The COA Design and COA Test steps are Tactical School modifications from the original process designed to stimulate creative thinking and inculcate it formally within the planning process. In COA design, multiple different broad concepts are devised simultaneously, creating a point in the appreciation process where the naïve diversification bias is intentionally put into play. The use of the creative thinking techniques, outlined earlier, is encouraged to identify all the possible courses of action that could be undertaken without unconsciously dismissing possibilities because of self-imposed judgements. As a formal step, it facilitates the removal of boundaries to aid creative thought by creating 'safety' in recognising that reality will be reimposed later in this and subsequent steps.

COA Test is a modification that sees an earlier combination of friendly and adversary actions than in the standard appreciation process. It was introduced to prevent a recurring problem identified in planning of developing friendly and adversary plans without adequately catering for how specific actions by the opposition would shape those plans. In essence, plans were developed fully in isolation only to be found invalid at the COA Analysis step. The COA Test step then is a critical thinking imposition to ensure that the conclusions (actions in the plan) are based on sound premises (responses by the opposition).

COA development sees the validated COA concept fleshed out to incorporate all aspects, in an equally creative and critical manner. This is then further assessed in the COA Analysis step. The final stage is confirming, with a single step – decision and execution. This sees a COA selected for implementation and a move from the 'plan' stage of the operations cycle²⁸ to the 'prepare' and 'execute' stages.

Conclusion

Thinking is fundamental to what Officers and military leaders do. Leaders' thinking will either keep soldiers alive or get them killed, so professional military leaders should be as good at thinking as they can possibly be. Military leaders (and their staff) must adopt thinking styles and methods that allow them to make appropriate plans and decisions to solve the problems they are faced with. Critical thinking is a process of intellectual rigour that aims to ensure the robustness of information to aid a decision; for the military it is essential to ensure decisions are made on objective information and not on emotion or unfounded intuition. Creative thinking

is a process of active imagination that aims to generate new ideas to aid a decision; for the military, creativity enables a commander to achieve surprise and adapt faster to new conditions than an adversary.

Tactical School training develops a foundation of critical thinking and logical reasoning in students on the Grade 3 Staff and Tactics Course. This is followed by fostering creative, unbounded thinking on the Grade 2 Staff and Tactics Course. The application of cognitive science to current proceedings has seen the Military Appreciation Process modified to aid, amongst other things, the application of both critical and creative thought in NZ Army officers.

Endnotes

- 1 Ministry of Defence (UK). 2011. "Decision-Making and Problem solving: Human and Organisational Factors." *Joint Doctrine Note 3/11*. London, England: Ministry of Defence (UK).
- 2 New Zealand Defence Force. 2012. *New Zealand Defence Doctrine* (3rd ed.), New Zealand Defence Doctrine Publication. Wellington, New Zealand: New Zealand Defence Force.
- 3 Pounds J. and J. J. Fallesen. 1997. "Problem solving of mid-career Army Officers: Identification of general and specific strategies." *ARI Research Note 97-21*. Fort Leavenworth, KS: United States Army Research Institute for the Behavioural and Social Sciences.
- 4 Ibid.
- 5 For more details refer to the position description developed, available on the Tactical School intranet site (NZDF internal only).
- 6 New Zealand Army Tactical School. 2016. *Tactical School Guide: Thinking* (Ver. 2). Palmerston North, New Zealand: New Zealand Army.
- 7 All explanations regarding Critical Thinking are directly from *Tactical School Guide: Thinking* (Ver. 2) and are a composite from various sources as follows:
 - » United States Army. 2012. ADRP 6-0, *Mission Command*, Washington, DC: Department of the Army.
 - » Glasser, E. M. 1941. *An Experiment in the Development of Critical Thinking*, Columbia, NY: Teacher's College, Columbia University.
 - » Paul, R. and L. Elder. 2009. *The Miniature Guide to Critical Thinking: Concepts and Tools*. Tomales CA: The Foundation for Critical Thinking.
 - » Ministry of Defence (UK). 2013. *Red Teaming Guide* (2nd ed.). London, England: Ministry of Defence.
 - » Scriven, M. and R. Paul. 1987. *Critical Thinking as Defined by the National Council for Excellence in Critical Thinking*, presented at the 8th Annual International Conference on Critical Thinking and Education Reform.
 - » University of Foreign Military and Cultural Studies. 2015. *The Applied Critical Thinking Handbook* (Ver. 7), Fort Leavenworth, KS: University of Foreign Military and Cultural Studies.
 - » North Carolina State University. 2015. *TH!NK program*, www.think.dasa.ncsu.edu, Raleigh, NC: North Carolina State University.
- 8 All explanations regarding Creative Thinking are directly from *Tactical School Guide: Thinking* (Ver. 2); and are a composite from various sources as follows:
 - » United States Army. 2012. ADRP 6-0, *Mission Command*, Washington, DC: Department of the Army.
 - » De Bono, E. 1992. *Serious creativity: Using the power of lateral thinking to create new ideas*. London, England: HarperBusiness.
 - » Harris, R. 2015. www.virtualsalt.com
 - » Koestler, A. 1964. *The Act of Creation*, London, England: MacMillan.
 - » Milne, J. 2008. *Go! The Art of Change*, Wellington: Steele Roberts Aotearoa Ltd.

- » Ministry of Defence (UK). 2013. *Red Teaming Guide* (2nd ed.), London, England: Ministry of Defence.
- » North Carolina State University. 2015. *TH!NK program*, www.think.dasa.ncsu.edu, Raleigh, NC: North Carolina State University.
- 9 Paul R. and L. Elder., 2009. *The Miniature Guide to Critical Thinking: Concepts and Tools*. Tomales CA: The Foundation for Critical Thinking.
- 10 Ibid.
- 11 Refer to note 7.
- 12 Oxford English Dictionary.
- 13 The criteria are as follows:
- » utilises a Manoeuvrist approach,
 - » produces a sustainable plan,
 - » complies with relevant doctrine,
 - » achieves the requirements of the higher commanders,
 - » defeats the adversary's assessed actions,
 - » maximises the effects of the available capabilities,
 - » adheres to the fundamentals of command,
 - » consciously accepts, and
 - » manages risk.
- 14 Klein, G. 1999. *Sources of Power: How people make decisions*. Cambridge, MA: MIT Press.
- 15 Flin R. and K. Arbutnot. 2002. *Incident command: Tales from the hot seat*. Aldershot, UK: Ashgate.
- 16 Klein. (Refer to note 14.)
- 17 Part of the rapidity of the German forces invading at the commencement of WW2 is attributed by some historians to them having practiced planning activities (TEWTs or staff rides) such as river crossing that they then faced in actual operations.
- 18 Refer to note 8.
- 19 JDN 3/11 (refer to note 1) and Beshears, J. and F. Gino. 2015. *Leaders as decision architects*, in Harvard Business Review, 93(5), 52–62.
- 20 JDN 3/11 (refer to note 1).
- 21 Australian Defence Force. 2009. LWD 5-1-4 *The Military Appreciation Process*, Canberra, Australia: Australian Army.
- 22 Australian Defence Force. 2015. ADFP 5.0.1 *Joint Military Appreciation Process*, Canberra, Australia: Australian Defence Force.
- 23 Refer to note 21.
- 24 United States Army 2012. ADRP 5-0 *The Operations Process*. Washington, DC: Department of the Army.
- 25 British Army. 2014. AC71038 *The Staff Officers' Handbook 2014*. Warminster, UK: British Army.
- 26 Battlespace Analysis and Threat Analysis steps are the first and second halves, respectively, of the Intelligence Preparation of the Battlespace (IPB) process as outlined in LWD 5-1-4.
- 27 If non-threat groups are also analysed, this step may be termed stakeholder analysis as stated in LWD 5-1-4.
- 28 United States Army. 2012. "Plan, Prepare, Execute, Assess" In ADRP 5-0 The Operations Process. Washington, DC: United States Army.





RELEVANCE AND IMPLICATIONS FOR THE NZDF TO INCLUDE ADVISE AND ASSIST FUNCTIONS WITHIN THE CURRENT OPERATION MANAWA MANDATE

By S53, OP MANAWA IV

Operation Manawa is NZDF personnel currently deployed to Iraq, and working alongside the Australian Defence Force as part of a Building Partner Capacity (BPC) mission.

Introduction

Arguably, the most important military component in the War on Terror is not the fighting we do ourselves, but how well we enable and empower our partners to defend and govern their own countries.¹

New Zealand (NZ) has a long and admirable history of contributing to international efforts to resolve conflict. Throughout numerous operations over many years, the New Zealand Defence Force (NZDF) has proven itself to be a valued coalition partner committed to peace and security. In recent years, one of NZ's leading operational focuses has been fighting the 'War on Terror', which has seen the NZDF contributing to numerous multinational operations in the Middle East and other troubled areas. One of the NZDF's latest military operations is Operation (Op) Manawa in Iraq. Op Manawa is what is known as a 'Build Partner Capacity' (BPC) mission where the NZDF, along with other coalition partners, have been training Iraqi Security Forces (ISF) in support of their fight against the Islamic State of Iraq and the Levant (ISIL).² This training has been based out of Taji Military Complex (TMC). While the support that the NZDF have been providing ISF units on Op Manawa has been beneficial to their campaigns, NZ's specified mandate has limited how much assistance the NZDF can provide on

this mission relative to other coalition partners. Currently, under the existing Op Manawa mandate, the NZDF is restricted to only providing 'behind the wire' training to ISF units from inside secure coalition locations.³ Other nations have the ability to not only train but also provide 'Advise and Assist' (A&A) support to ISF units while they progress in their operations against ISIL. This has proven to be very beneficial to the overall tactical plan and the long term mission of restoring power to the ISF and sovereignty to Iraq.

Aim

This paper aims to explain why and how New Zealand's Operational Mandate should be changed to incorporate A&A capabilities as part of Op Manawa. It will do this by firstly explaining what A&A operations are and why it will be beneficial for the NZDF to provide this capability as part of Op Manawa. It will then illustrate how A&A capabilities can be effectively implemented to enhance mission success while maintaining safety to the NZDF's personnel, equipment and credibility.

Operation Manawa

Op Manawa is NZ's current mission in Iraq where NZDF personnel are working alongside multiple coalition forces as part of a BPC training mission. Up to 106 NZDF personnel are currently deployed to Iraq as part of the combined New Zealand (NZ), Australian and United Kingdom (UK) Training Team known as Task Group Taji (TGT).⁴ TGT falls under a multi-national headquarters

titled 'Combined Joint Forces Land Component Command – Operation Inherent Resolve' (CJFLCC-OIR) who are responsible for all coalition force operations within Iraq. The purpose of the TGT BPC deployment is to train ISF to be able to conduct combat operations at a specified trained level, as agreed on by the ISF, CJFLCC-OIR and coalition trainers. It also aims to train ISF to a state where they are considered a self-sustaining capability for the Iraqi Government. The training provided by Op Manawa as part of TGT covers a broad range of military skills. These include basic weapon and battlecraft skills at the individual and unit level, as well as various other skills such as medical training and logistical support to help sustain operations.⁵

Op Manawa commenced in May 2015. As at April 2017 TGT has trained over 21000 ISF soldiers from various different backgrounds including army, Special Forces, federal police and other ISF units.⁶ Many of these individuals and units have graduated from training and gone on to directly assist in areas of conflict across Iraq, such as the Anbar Province, Fallujah and Mosul, which were known ISIL strongholds. Op Manawa was initially due to last two years, however, in 2016, the New Zealand Government reviewed the NZDF's contribution and extended the deployment conclusion date to November 2018.⁷ As part of this review, the mission's mandate was also amended to allow small numbers of training and force protection teams to travel outside of Taji to other secure coalition locations to conduct BPC training with ISF units.⁸ This was done to minimise the logistical burden on the ISF by sending trainers to them as opposed to units coming to TMC. TGT is permitted to conduct Mobile Training Teams (MTT) at Al Taqqadum Air Base (ATAB) located to the Southwest of TMC, however, there is potential in the future to send elements to other secure locations throughout Iraq, for example; Besmayah Air Base, which is located approximately 52 kilometers to the southeast of TMC.⁹

Definitions: BPC/Advise and Assist

BPC is a designated location or unit that conducts training and equipping of forces in order to generate sufficient military capability required for specific missions. The training is predominantly collective and can be tailored for specific groups of security forces. The effect that BPC provides is a combination of "all activities that seek to

train, equip, advise and assist a security force to build its capacity over time, enabling it to conduct immediate security operations and provide a long term security effect within its area of responsibility".¹⁰

A&A is a characteristic of BPC missions. It still has an effect towards BPC, but is more specialised in how it is delivered. A&A comprises all activities that provide subject matter expertise, guidance, advice and counsel to forces relative to its mission. It does not focus on collective training like BPC does. A&A operations may occur under combat administrative (planning) conditions at the tactical, operational and strategic levels and can occur at both at the individual and group levels.¹¹

Activities involved in A&A can be broken down into 'Advise' and 'Assist' tasks. Activities specific to 'advising' include facilitating and influencing forces through means of guidance, and improving through mutual professional relationships based on trust. It also includes observation, evaluation and reporting on force performances in order to focus efforts and resources effectively during operational phases. Activities specific to 'assisting' include providing forces as direct and indirect enabler support to enhance the planning and conduct of operations, and to facilitate the application of Coalition Capabilities within defined authorities and limitations.¹²

A&A Examples within TMC

A&A operations are already existent within TMC. The US Army currently has a logistical A&A team functioning within TMC conducting operational level logistical A&A to local ISF units. The team has various specialists with a range of expertise that enables them to provide A&A capabilities in numerous logistical and administrative areas. These areas include, but are not limited to; multifunctional logistics, human resources, supply and ammunition, maintenance, medical, transport, and acquisitions and procurement.¹³

The Australian Defence Force (ADF) element of TGT-IV has been given government approval to conduct A&A tasks within the Division Headquarters located in TMC known as the Northern Baghdad Operations Centre (NBOC). The NBOC is responsible for the operations conducted by all the local Brigades operating in the

Area of Operations (AO) immediately to the north of Baghdad. The ADF A&A team work with and guide the Divisional Headquarters in their day to day procedures and operations. The team provides A&A daily with three personnel allocated to the NBOC operations cell and one person allocated to the logistics cell.¹⁴

NZDF A&A Requirement – OP MANAWA

The reason why there is a requirement for the NZDF to conduct A&A operations as part of Op Manawa is that the operational environment in Iraq has drastically changed since the commencement of the NZDF operation. During the early Op Manawa rotations, in the build up to the ISF major offensives, ISF specifically requested combat focused BPC training. As a result of this, the training provided by TGT was primarily combat orientated and delivered predominantly to Iraqi Army units in preparation for these offensives.¹⁵ As ISF secured more key areas within Iraq, the demand for training altered. The training audiences changed from being mainly Iraqi Army units to include a lot more units from other ISF areas, in particular hold force and police units, and the training delivered was adapted to suit the new requirements. Training was amended to not only incorporate combat training, but also a variety of training suited to hold force and police units.¹⁶ The ISF demand for TGT services also expanded. Local ISF units wanted not only training but also A&A capabilities from TGT. This was to help develop their processes, knowledge and capabilities within their headquarters and was the reason for the introduction of the ADF A&A team.¹⁷

If the NZDF's contribution to Iraq is to continue, options for maintaining relevance in a changing situation should be explored. NZ should consider providing A&A capabilities as part of Op Manawa to ensure it stays relevant to ISF operational requirements. By doing this the NZDF would gain credibility with both ISF and coalition forces, enhancing its reputation as a valued military partner. By providing NZDF personnel to conduct A&A, the overall A&A capability would also be enhanced within TGT through the individual skillsets, knowledge and values that the NZ personnel would contribute. This would have a positive impact on the overall ISF operations and development in the long term.

Risks to NZDF when conducting A&A operations

If the NZDF was to provide an A&A capability to ISF units within TMC using current staffing, it is likely that this would have a negative effect on current Op Manawa BPC outputs by taking away capability from other areas. This could be mitigated by keeping A&A teams small and selecting individuals to conduct A&A who have additional capacity within their current roles. Alternatively, it could be mitigated by increasing the Op Manawa staffing to include a fully separate A&A team thereby ensuring no negative effect on operational outputs.

It could be argued that there is a media or reputational risk to the NZDF by conducting A&A as part of Op Manawa. There is potential for media to misconstrue, or the public to misunderstand, the responsibilities and roles of the A&A teams and link what the NZDF are doing to combat operations conducted by the US and other coalition forces. The NZDF would need to clearly define and accurately portray the limitations of the A&A team and emphasise that there would be no change to current operating requirements.

There is potential when providing A&A to operational units that NZDF personnel could inadvertently be linked to ISF actions that fall outside of the stipulated operational mandate or NZDF ethos. An example of this is if an ISF element undergoing A&A was to breach the Laws of Armed Conflict. This could be mitigated by providing no A&A to local units while they are conducting kinetic or offensive operations. NZDF A&A should only be limited to supporting in the development of staff processes or providing logistical support. It is also recommended that if any events occur that could be considered outside of NZDF operational mandate that the NZDF personnel are to cease A&A operations until given clearance to recommence by the NZDF Senior National Officer.

Implementation of A&A operations on OP MANAWA

Course of Action 1 – NZDF Only A&A Team

The NZDF could look at implementing an A&A team consisting solely of NZDF personnel. The A&A team would be a task organised element capable of providing A&A up to divisional

headquarters level that would mirror the ADF A&A team. At its simplest form it would consist of a small group of personnel with a background in combat, combat support and logistical functions, and would include its own force protection element. The team would be able to A&A local units in developing logistical, planning and staff processes within their headquarters.

The advantage of this course of action (COA) is that the NZDF would be in full control of what the A&A team carries out. This would minimise the reputational risk to the NZDF and ensure all activities are conducted in accordance with NZ rules of engagement (ROE). It would also provide TGT with the flexibility to expand A&A operations to other BPC locations in the future due to the redundancy a second team would provide. The potential drawback to this COA is that it would require NZDF to modify its current Op Manawa staffing to include a fully segregated A&A team with force protection. The reason for this is that it is assessed that it would be too difficult to implement using the existing capability without significantly affecting current BPC operational outputs.

Course of Action 2 – Integrated ADF/NZDF A&A Team

The NZDF could integrate into the existing ADF A&A team to enhance or take responsibility for some of their capabilities. There are multiple ways of constructing this approach. One option is to split the current responsibility of the A&A team in half. Alternatively the NZDF could reinforce the existing A&A team by providing additional personnel who could reinforce the logistics and operations cells and add to their capability.

An advantage to this COA is that the NZDF could most likely achieve the staffing requirements using the existing Op Manawa staffing as there would be no additional force protection and minimal A&A personnel required. It is still proposed, however, that the NZDF increase its staffing to cover A&A personnel at minimum to provide minimal disturbance to current operational capabilities. Another advantage to this COA is that the relationships with the local divisional headquarters already exist so would not need to be generated by the team. One drawback to this COA is that the NZDF does not have full control over what the A&A team undertakes and there is the potential for the ADF to be more ambitious in this area than

the NZDF is comfortable with. If members of the A&A team provide advice to kinetic or targeting operations, the NZDF could be unintentionally associated with these acts. This could pose a media or reputational risk as mentioned earlier and strict guidelines would have to be put in place to mitigate this concern.

Conclusions

The BPC training efforts that the NZDF have been providing ISF as part of Op Manawa have been very beneficial to date. Due to the changing operational environment however, training alone is now not enough to sufficiently meet the operational requirements of the ISF to TGT.

By incorporating A&A capabilities into the current Op Manawa mandate, the benefit the NZDF can provide the ISF with will be much greater and assist in achieving their operational goals. The NZDF can effectively implement A&A into Op Manawa without increasing risk to NZDF personnel and reducing operational capability provided it is implemented effectively.

Overall, by providing A&A as part of Op Manawa the NZDF will be enhancing its reputation with ISF and coalition partners, increasing the capability of TGT, and developing and empowering ISF for when coalition forces begin to draw down.

Recommendations

In accordance with the above conclusions the following recommendations should be considered in order to implement A&A capabilities on Op Manawa:

- (a) NZDF should integrate with the current TGT ADF A&A team to minimise the burden on staffing and capabilities.
- (b) Additional positions should be added to the current Op Manawa staffing to minimise the impact on the current operational capabilities and outputs.
- (c) The NZDF should provide no A&A to local units while they are conducting kinetic or offensive operations. NZDF A&A should be limited to only supporting in the development

of staff processes or providing logistical support. If any events occur that could be considered outside of NZDF ROE the NZDF personnel are to cease A&A operations until given clearance to recommence by the NZDF Senior National Officer.

(d) The NZDF would need to clearly define and portray the limitations of the A&A team to the media and NZ public to emphasise that there would be no change to current operating requirements and that the NZDF will not be partaking or assisting in kinetic activities.

Endnotes

- 1 Gates, US Secretary of Defence Speech, November 26, 2007.
- 2 New Zealand Defence Force. "International Response to the Threat of Islamic State in Iraq and the Levant: New Zealand Contribution." (Wellington, New Zealand: HQNZDF, 2016).
- 3 Moir, J. "Kiwi Troop Deployment to Iraq has been Extended by 18 months". (Stuff, 2016).
- 4 New Zealand Defence Force. "Fourth Wave of NZ Troops Ready for Iraq Mission." (Wellington, New Zealand: Defence Public Affairs, HQNZDF, 2016).
- 5 New Zealand Defence Force. "Iraq". (Wellington: New Zealand: HQNZDF, 2016).
- 6 <http://video.defence.gov.au/play/5076#sort=date&group=Latest#sort=date&group=Latest>.
- 7 New Zealand Defence Force. "International Response to the Threat of Islamic State in Iraq and the Levant: New Zealand Contribution." (Wellington, New Zealand: HQNZDF, 2016).
- 8 New Zealand Defence Force. "Iraq". (2016).
- 9 Brownlee, "Training of Iraqis at Al Taqaddum Approved." (Wellington, New Zealand, New Zealand Government, 2016).
- 10 JDN 1-13, Chapter3, Section 5.e and JP 3-07, Section 3.C.5.
- 11 Ibid.
- 12 Ibid.
- 13 Johnson, D. "Logistics advise, assist enables Iraqi Security Force." (United States Army, 2016).
- 14 Department of Defence. (Australia). "Task Group Taji on a Mission to Advise, Assist and Protect". (Australia: Department of Defence, Australian Government, April 5, 2017).
- 15 Ministry of Defence (New Zealand). "Deployment Map." (Wellington, New Zealand: Ministry of Defence, n.d.).
- 16 Department of Defence (Australia). "Iraqi Law Enforcement Trainees Complete Task Group Taji Training." (Australia: Department of Defence, Australian Government. February 17, 2017).
- 17 Department of Defence. (Australia). "Task Group Taji on a Mission to Advise, Assist and Protect". April 5, 2017).

References

- Brownlee, G. 2016. "Training of Iraqis at Al Taqaddum Approved." Wellington, New Zealand: New Zealand Government. November 5. <https://www.beehive.govt.nz/release/training-iraqis-al-taqaddum-approved>
- <http://video.defence.gov.au/play/5076#sort=date&group=Latest#sort=date&group=Latest>.
- Department of Defence (Australia). 2017. "Iraqi Law Enforcement Trainees Complete Task Group Taji Training." Australia: Department of Defence, Australian Government. February 17. <https://news.defence.gov.au/media/media-releases/iraqi-law-enforcement-trainees-complete-task-group-taji-training>
- Department of Defence. (Australia) 2017. "Task Group Taji on a Mission to Advise, Assist and Protect". Australia: Department of Defence, Australian Government. April 5. <https://news.defence.gov.au/media/stories/task-group-taji-mission-advise-assist-and-protect>
- Gates, R. M. 2007. Secretary of Defense Speech, Landon Lecture presented at Kansas State University, Manhattan, KS, November 26. US Department of Defense. <https://www.archive.defence.gov/speeches/speech.aspx?speechid=1199>
- Johnson, D. 2016. Logistics advise, assist enables Iraqi Security Force. United States Army. August 20. https://www.army.mil/article/173701/logistics_advise_assist_enables_iraqi_security_force

Joint Forces (US). 1995. JP 3-07 *Joint Doctrine for Military Operations Other Than War*. Section 3.C.5.

Ministry of Defence (New Zealand). (n.d.) "Deployment Map" Wellington, New Zealand: Ministry of Defence. <http://www.defence.govt.nz/what-we-do/diplomacy-and-deployments/deployment-map/iraq/>

Ministry of Defence (UK). 2013. JDN 1-13 *Linguistic Support to Operations* Chapter 3, Section 5.e

Moir, J. 2016. "Kiwi Troop Deployment to Iraq has been Extended by 18 months". *Stuff*. June 20. <http://www.stuff.co.nz/national/politics/81265744/Kiwi-troop-deployment-to-Iraq-has-been-extended-by-18-months>

New Zealand Defence Force. 2016. "Iraq". Wellington: New Zealand: HQNZDF. <http://www.nzdf.dixs.mil.nz/operations/Iraq/default.htm>

New Zealand Defence Force. 2016. "International Response to the Threat of Islamic State in Iraq and the Levant: New Zealand Contribution." Wellington, New Zealand: HQNZDF. August 16. <http://www.nzdf.mil.nz/corporate-documents/iraq-deployments>

New Zealand Defence Force. 2016. "Fourth Wave of NZ Troops Ready for Iraq Mission." Wellington, New Zealand: Defence Public Affairs, HQNZDF. (October 28) <http://www.nzdf.mil.nz/news/media-releases/2016/20161028-fourth-wave-of-nz-troops-ready-for-iraq-mission.htm>





NZ ARMY CULTURE: DEVELOPING A LEARNING ORGANISATION TO ADAPT TO GENDER DIVERSITY

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Organisational cultures provide a framework of shared assumptions¹ that operate as social controls within each organisation, influencing how that organisation can adapt to changing environments.² Military cultures, fundamentally different from civilian organisational cultures, tend to be conservative, masculine and resistant to change.^{3,4} Despite similarities across international military cultures, the New Zealand Army culture is specific to New Zealand, and also different from the other two services within the New Zealand Defence Force (NZDF). This culture has developed over time, and has been influenced by both military requirements and the wider New Zealand society. As society and its values and expectations change, so too must army culture adapt to ensure it maintains both relevancy and social acceptance within New Zealand and international communities. Developing learning organisation characteristics would allow the New Zealand Army to better identify and implement positive and effective change, particularly in the areas of gender and diversity. This essay will examine the New Zealand Army culture, how this may align with the characteristics of a learning organisation and how this could advance positive cultural changes in gender-based stereotypes and diversity.

Culture

Culture provides individuals and groups with a shared understanding of the world, offering an interdependent set of values and norms of behaviour common within a community that perpetuate over time.⁵ Cultures generally can only be partially understood by outsiders through their verbal and non-verbal artefacts, with words, for example, having differing meanings for different

cultures, even in the same language.⁶ Cultures embrace values, beliefs and behaviours but are rarely mutually exclusive, with members generally influenced by multiple, overlapping cultures that could encompass ethnic, national, religious and occupational cultures, all of which will influence individuals' worldviews.⁷ Within organisations, culture provides a framework of shared assumptions, values and beliefs to allow members to tailor their behaviour and respond to situations in accordance with organisational goals.⁸ This culture provides a social control function to influence members' decisions and behaviours, bonding members together and providing an understanding of organisational situations and responses.⁹ To stay successful, organisations need an adaptive culture that allows members to focus on changes within the organisation's environment, identifying and supporting initiatives that allow the organisation to keep pace with any environmental changes.¹⁰ Organisational cultures can have both positive and negative influences on organisational success, with strong cultures only increasing organisational success if it is appropriate to the organisation's environment.¹¹

Military Culture

Military cultural imperatives lead to military personnel generally having very strong self-identities,¹² with their military service influencing their worldview as much as gender, ethnicity and social class.¹³ Organisationally, militaries have cultures that are fundamentally different from those of civilian organisations,¹⁴ as "their primary mission entails a readiness to take life and destroy property,"¹⁵ and always reflects a political process.¹⁶ These cultures tend to be "conservative, rooted in history and tradition, based on group loyalty and conformity and oriented toward obedience to superiors."¹⁷ With the primary function of any military being to fight and win wars with a real potential for killing or being killed, military

command and leadership paradigms centre on what are often authoritarian hierarchical structures, demanding discipline and sacrifice of personnel to allow the achievement of objectives.¹⁸ The ultimate paradox is that military personnel, “the self-appointed front-line guardians of our cherished ... democratic values, do not live in democracy themselves.”¹⁹

NZDF and specific NZ Army Cultures

Despite having similarities, no two militaries are culturally identical as each military is influenced by the characteristics of its nation’s civil society and institutions that safeguard both the separation of and effective ties between the state and its society.²⁰ The NZDF therefore, as part of the apparatus of government and an instrument of national power,²¹ is not separate from New Zealand society and must be integrated with and reflective of it to be accepted and effective.²² To achieve its objectives,²³ the NZDF is a voluntary, professional, values-based military organisation with its culture based on its war-fighting ethos underpinned by the tenets of courage, commitment, comradeship and integrity.²⁴

While the NZDF must be integrated into wider New Zealand society, it also must be distinct from the broader New Zealand society to allow it to achieve its objectives,²⁵ but these differences, like culture, can have positive or negative impacts. One of the key differences that directly affects the organisational culture of the NZDF is its proportion of women. Currently slightly over half the New Zealand population is female,²⁶ while only 16% of regular force NZDF personnel are female,²⁷ and there has been little progress in extending this over the last ten years.²⁸ This proportion is even further reduced within the NZ Army where only 12.7% of army personnel are female.²⁹ Military organisations are traditionally male-gendered cultures³⁰ with military roles still seen as predominantly masculine occupations, supported by male traditions and practices exaggerating this masculinity.³¹ The low numbers of females within NZDF, and lower numbers within NZ Army, do not effectively challenge this male-dominated culture.

As a service within the NZDF, the New Zealand Army (NZ Army) is similar in many ways to the wider NZDF culture, ethos and value-base, such as a warrior ethos supported by the values of courage, commitment, comradeship and integrity,³² but does have its own culture independent from those of its

sister services within the NZDF.³³ Despite this, there are differences. The NZ Army soldier melds two cultures that have dominated New Zealand warfare: Maori and British; the rigidly disciplined British military culture amalgamating with the aggressive and adaptable Maori warrior culture.³⁴ This influence has flowed through into the current day NZ Army with 22% of service members affiliating as Maori,³⁵ compared with 16.5% across the wider NZDF³⁶ and 15.6% within the whole of New Zealand society.³⁷ With a significantly higher proportion of Maori members than both the NZDF and wider society, the NZ Army has a strong cultural identity that embraces both Tikanga Maori and European custom. The dedicating of NZ Army’s multi-cultural marae in 1995 as the home of Ngati Tumatuaenga, the tribe of the God of War,³⁸ reflects its dual heritage and distinct cultural identity. The marae also clearly illustrates the culture of protection for New Zealand the NZ Army holds with the westward facing placement of the marae and the lack of tribal landholdings representing its position as guardian, protecting from attack by night and day, its sole purpose being to serve the interests of the people of New Zealand.³⁹

The differing proportions of female personnel within the NZ Army and the wider NZDF results in differing organisational cultural and gender-based assumptions. This is reinforced by the significantly smaller percentage of women deployed as part of the total NZ Army deployed forces when compared to the other two services,⁴⁰ representing an even smaller proportion of NZ Army women within deployed forces. While few women join any military force to advocate for gender equality,⁴¹ the military masculine ideology⁴² and the male-oriented leadership model⁴³ are more concentrated within the NZ Army, likely posing increased gender-based challenges for women within this service of the NZDF. Both the larger gender imbalance and the related challenges for women impact on the overall culture within the NZ Army.

Changing Cultures

Within the continually changing contemporary operating environment⁴⁴ and evolving societal expectations, military organisations must adapt to keep pace with both environmental and changing societal norms.⁴⁵ Military cultures, which are generally conservative, traditional and obedience-oriented,⁴⁶ can be very resistant to change, with change often hindered or blocked outright through

resistance resulting from its cultural preferences and biases.⁴⁷ Any change that is incorporated will be accepted only in a manner that conforms to its sense of self, that is, its culture.⁴⁸ Cultural change can only be achieved once people's actions have changed, group benefits from the change have been seen, and individuals have connected the cultural changes to improved performance.⁴⁹ However, overcoming deep-seated and persistent cultural characteristics within militaries, which traditionally favour continuity rather than change,⁵⁰ is difficult, with the level of difficulty increasing in line with the size of change required within an organisation's cultural identity.⁵¹ This reluctance to change is highlighted by Schein's theory of organisational culture, which reinforces that the deepest layer of organisational culture, underlying assumptions, being the often unconscious and taken-for-granted beliefs and perceptions within organisations such as within militaries, are difficult and time-consuming to change.⁵² Complicating any sought after change is that these same underlying assumptions can operate as an organisational defence mechanism to distort and rationalise away any potential change, reducing the anxiety and challenges faced by individual members and the organisation as a whole when these fundamental assumptions are challenged.⁵³

Developing NZ Army into a Learning Organisation

To remain successful, organisations, including militaries, require an adaptive culture that embraces initiative,⁵⁴ rather than a focus on sustaining the status quo through increased efficiencies.⁵⁵ The development of a learning culture within any military would allow it to encourage adaptation and effectively respond to fast changing and unpredictable situations. Learning organisations are organisations that are highly responsive and adaptable to external environments, that support continuous learning and challenge current assumptions and practices,⁵⁶ while military culture can impede adaptation.⁵⁷ Military organisational learning requires a culture that embraces independent thinking, open communication and space for individuals to question underlying tenets,⁵⁸ characteristics that do not tend to be prevalent. This learning framework requires leaders throughout the organisation who are able to understand the changing environment⁵⁹ and can create environments where individuals can make errors and question or challenge the status quo.⁶⁰ With organisational culture influencing the acceptance

of change,⁶¹ a learning organisation culture within the NZ Army and wider NZDF would support the implementation of gender-based changes to align better with both strategic and societal expectations.

While militaries often have cultures that may be resistant to cultural change or the acceptance of a learning organisation framework, they do have processes that are supportive of developing this framework,⁶² and the NZ Army is no different. The rapid changes in the contemporary operating environment in recent years have led to senior leaders recognising a need to "harness the intellectual capital of its young officers,"⁶³ which has in turn enhanced the organisation's abilities to master the basics of the current conflict while preparing for the next, which will always differ from what was expected.⁶⁴ This includes the protection of cultural elements that support institutional change under duress.⁶⁵ A critical factor in supporting and advocating for learning, and the learning errors that come with this, are military leaders at all levels who allow for questioning and who empower autonomy.⁶⁶ With culture directing and regulating actions as well as influencing thoughts and feelings,⁶⁷ the process of recent tactical and operational learning will have reinforced learning organisation actions through encouraging independent thinking by junior leaders, promoting open discussions and pushing for procedural advancements.⁶⁸ The reality that underpins any positive move towards a more learning-based organisational framework is the requirement for intelligent and open-minded leaders who understand the fundamental logic and evidence, and are able to recognise when change is required and then see it through.⁶⁹

Commanders at all levels within NZDF and the NZ Army are facing increasing levels of fiscal and operational accountability, influencing the development of an environment that makes the organisational tolerance of errors increasingly difficult, hampering efforts to develop a military learning organisation environment. One such influence outside the control of the NZDF but that directly impacts the tolerance of errors and the manner in which the organisation conducts its business has been the Health and Safety at Work Act 2015.⁷⁰ The requirement for the NZ Army to train realistically to fight and win wars, with the potential for real harm⁷¹ underpins the often conservative nature of military activities and the culture of obedience to superiors.⁷² These two factors tend to contradict the requirements

within learning organisations to allow errors and the questioning of extant assumptions and practices. Within traditionally conservative military organisations, with their lack of defined tolerances for errors or the clearly stated and practised willingness to allow rather than punish mistakes, there may be a tendency for personnel to avoid risk and challenges to current methodologies altogether, deviating even further from a learning organisation paradigm. Developing and promulgating a clearly defined risk framework, where commanders at all levels can identify where risks can be taken and exercised and where there is no tolerance for risk, such as for safety, could provide commanders with safe parameters within which they know they are able to take assessed risk and make errors without the threat of punitive action. Additionally, commanders should be actively encouraged to take risk within training activities, again without the unstated threat of negative outcomes, so they can practise that skill just as other military skills are trained, practised and assessed. The practice and positive reinforcement of risk taking behaviour within defined boundaries would enhance development of a more learning organisation focused framework within NZ Army both within operational practices and in wider cultural issues such as gender stereotypes and diversity.

Gender Diversity and NZ Army Culture

Within traditionally male-dominated organisations such as the NZ Army, women often feel an unstated requirement to adhere to stereotypically masculine leadership traits to fit into masculine organisational cultures⁷³ and achieve professional success.⁷⁴ This has had the effect of reinforcing institutionalised gender differences within military culture, stereotyping status and gender-based beliefs attributing men higher levels of worthiness and competence than women.⁷⁵ The male-gendered military culture,⁷⁶ with its supporting patriarchal structures and masculine ideologies, has traditionally supported the achievement of directed political and defence-related aims.^{77,78}

Changing political and conflict environments in the twenty-first century, however, required militaries, including the NZ Army, to extend involvement in military operations into humanitarian activities, non-combatant protection and prevention of sexual and gender violence.⁷⁹ These evolutions, combined with changing social norms and expectations,

indicate that traditional military organisational cultures and the gender imbalances within them may now be less effective at achieving mission success.⁸⁰ To maintain relevance and acceptance within wider New Zealand society and on the international stage, the NZ Army must demonstrate a level of cultural adaptability to accept a more gendered perspective that would allow it to meet the demands for gender understanding and organisational diversity.⁸¹ Without this paradigm shift within the NZ Army, it is likely that the changing gender expectations within the rest of New Zealand society will leave the Army behind as an “isolated counter culture.”⁸²

UN 1325 and NZ Army

In line with international changes in gender awareness and a greater understanding of the particular threats faced by women and girls within armed conflicts and humanitarian crises, United Nations Security Council Resolution 1325 (UN 1325) was passed in 2000.⁸³ While promoting gender equality and addressing women’s security within conflict, UN 1325 accepts that men, women, boys and girls experience security threats differently.⁸⁴ It calls for the application of a gendered-perspective to all present and future international security challenges, recognising that gender inequality contributes to instability, and is relevant to every crisis.⁸⁵ UN 1325 urged member states to increase representation of women throughout the prevention, management and resolution of conflict, including an increased proportion of female UN peacekeepers and police.⁸⁶ Despite the achievements in some areas of UN 1325,⁸⁷ by 2013 fewer than four percent of UN peacekeepers globally were women, with that figure further broken down to some two percent of UN military personnel and fewer than ten percent of UN police.⁸⁸ With the NZ Army’s smaller proportion of women than the wider NZDF⁸⁹ combined with the lower proportion of women deployed,⁹⁰ the NZ Army finds itself further away from the ideals espoused within UN 1325 than either of the remaining services within NZDF. One key challenge to achieving greater success in line with UN 1325 is that the vast majority of UN peacekeeping missions require a heavy dependence on combat trades and, although New Zealand opened all combat roles to women in 2000,^{91,92} little progress has been made in attracting women to these trades.⁹³ Until these trades are seen as viable options for women entering the NZDF it is unlikely that these figures will increase significantly.

It has been assumed that gender-balancing, increasing the numbers of women within an organisation, is easier to implement than gender-perspective strategies, and that gender-balancing will ultimately achieve the latter.⁹⁴ This strategy would argue that simply increasing the numbers of women within the NZ Army, in deployed, garrison and senior roles, could bring about a change in organisational culture that would adapt to a more gendered perspective, automatically reducing organisational gender-bias. Sadly, many western militaries that have been successful in increasing the proportion of women serving have still struggled to implement a gender perspective.⁹⁵ To achieve a military organisation that embraces the strength that gender and wider diversity can provide, not only must minority group numbers be increased, but organisational and cultural biases must be reduced, limiting gender discrimination and prejudice, and increasing the value that diversity has in achieving organisational goals.⁹⁶ The flexibility and adaptability inherent within learning organisations would allow the NZ Army to develop its culture from that of a traditional masculine military to an armed force that was more representative of its civil society, better able to meet the changing conflict environment as well as delivering a force that better evidenced the spirit and expectations of UN 1325.

Conclusion

The culture of any organisation shapes not only the way individuals within that organisation perform

and operate with each other and within their professional roles, but how the organisation itself sits within the wider civil society. The adaptability of any organisational culture directly impacts on its ability to keep pace with changing environments, and therefore affects the overall success of the organisation. The NZ Army as part of the NZDF is not immune to these influences, and has a culture heavily influenced by traditional military norms, leading to a conservative, male-dominated culture that can be very resistant to change. Within the changing operating environment of the twenty-first century and with the evolving social norms and expectations in the wider New Zealand and international communities, this can result in the NZ Army becoming less operationally effective as its rigid culture finds itself out of alignment with the changing societies around it. Actively adopting the characteristics of a learning organisation that both allows and supports errors within clearly defined boundaries, and the challenging of extant organisational norms and behaviour within NZ Army's culture would enable a better adaptation to the changing gender-based and wider diversity expectations across civil society, including within the UN community. A military culture that was more flexible and able to adapt to societal changes faster would directly and positively affect the NZ Army's ability, as part of the NZDF, to be operationally successful in the ever changing and increasingly diverse operational environments that it has and will continue to find itself in.

Endnotes

1 McShane and Travaglione, *Organisational behaviour on the Pacific Rim* (Australia: McGraw-Hill Higher Education, 2007), 534.

2 Ibid, 543.

3 Hall, "The importance of understanding military culture," *Social Work in Health Care* 50(1) (2011): 4–5.

4 Zellman, G., J. Z. Heilbrun, C. Schmidt, and C. Builder. 1993. "Implementing policy change in large organizations." In *Sexual orientation and US military personnel policy: Options and assessments*. National Defence Research Institute MR-323-OSD (Washington, DC: Rand), cited in Kuehn, "Military – NGO Interaction: The Value of Cultural Competence," 10.

5 Burnes, *Managing change: A strategic approach to organisational dynamics* (England: Pearson Education, 2009), 199.

6 Kuehn, "Military – NGO Interaction: The Value of Cultural Competence," i.

7 Corey, Corey, and Corey, *Groups: Process and practices* (Belmont, CA: Cole, 2014), 13.

8 McShane and Travaglione, *Organisational behaviour on the Pacific Rim*, 534.

9 Ibid, 540.

10 Ibid, 543.

11 Ibid, 542.

12 Perito, *Guide for participants in peace, stability, and relief operations* (Washington DC: US Institute of Peace Press, 2007), 270.

- 13 Carrola and Corbin-Burdick, "Counselling military veterans: Advocating for culturally competent and holistic interventions," *Journal of Mental Health Counselling*, 37(1) (2015), 6.
- 14 Hall, "The importance of understanding military culture," 4-5.
- 15 Wilson, "Defining military culture," *The Journal of Military History*, 72(1) (2008), 22.
- 16 Seiple, *The U.S. Military/NGO Relationship in Humanitarian Interventions* (Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, 1997), 6.
- 17 Zellman et al., "Implementing policy change in large organizations," in *Sexual orientation and US military personnel policy: Options and assessments*. Cited in Kuehn, "Military – NGO Interaction: The Value of Cultural Competence," 10.
- 18 New Zealand Defence Force, *Executive Overview of the New Zealand Defence Force* (Wellington, New Zealand: New Zealand Defence Force, 2013), 9.
- 19 Wertsch, M. E. 2006. *Military brats: Legacies of childhood inside the fortress* (Brightwell Publishing, 2006), 15, cited in Hall, "The importance of understanding military culture", 8.
- 20 Shils "The virtue of civil society," *Government and Opposition* 26(1) (1991), 4.
- 21 New Zealand Defence Force, *New Zealand Defence Force 2015–2018 Statement of Intent* (Wellington, New Zealand: New Zealand Defence Force, 2015), 6.
- 22 Rosen, "Military effectiveness: Why society matters," *International Security* 19(4) (1995), 6.
- 23 New Zealand Defence Force, *New Zealand Defence Force 2015–2018 Statement of Intent*, 10.
- 24 New Zealand Defence Force. *Executive overview of the New Zealand Defence Force*, 10.
- 25 Terriff, "Warriors and Innovators: Military change and organizational culture in the US Marine Corps," *Defence Studies* 6(2) (2006), 216.
- 26 *New Zealand Demographics Profile 2014* Indexmundi.com.
- 27 New Zealand Defence Force. *Executive overview of the New Zealand Defence Force*, 10.
- 28 Ministry of Defence. *Maximising Opportunities for Military Women in the New Zealand Defence Force* (Wellington, NZ: Evaluation Division, Ministry of Defence, 2014), 3.
- 29 Ibid, 17.
- 30 Fox and Pease, "Military deployment, masculinity and trauma: Reviewing the connections," *Journal of Men's Studies* 20(1) (2012), 17, 21.
- 31 Boyce and Herd, "The Relationship between Gender Role Stereotypes and Requisite Military Leadership Characteristics," *Sex Roles* 49 (2003), 367.
- 32 New Zealand Army, *The Way of the New Zealand Warrior* (Wellington, New Zealand: New Zealand Army, 2010), 14-27.
- 33 Terriff, "Warriors and Innovators," 216.
- 34 New Zealand Army, *The Way of the New Zealand Warrior*, 9.
- 35 Wolfe, "Armed forces – Historical overview," Te Ara – The Encyclopedia of New Zealand.
- 36 New Zealand Defence Force, *Executive overview of the New Zealand Defence Force*, 10.
- 37 Statistics New Zealand, *New Zealand in profile 2015: An overview of New Zealand's people, economy and environment* (New Zealand Government, 2015).
- 38 Richard Taylor, *Tribe of the God of War: Ngati Tumatauenga*, (Napier, NZ: Heritage – New Zealand, 1996), 110.
- 39 Ibid, 110–111.
- 40 Ministry of Defence. *Maximising Opportunities for Military Women in the New Zealand Defence Force*, 32.
- 41 Egnell, "Gender Perspectives and Military Effectiveness: Implementing UNSCR 1325 and the National Action Plan on Women, Peace, and Security," *Prism: A Journal of the Center for Complex Operations* 6(1) (2016), 84.
- 42 Silva, "A New Generation of Women? How Female ROTC Cadets Negotiate the Tension between Masculine Military Culture and Traditional Femininity." *Social Forces* 87(2) (2008), 940.
- 43 Boyce and Herd, "The Relationship between Gender Role Stereotypes," 365.
- 44 Evans, "The Twenty-First Century Security Environment: Challenges for Joint Forces," *The RUSI Journal* 154(2) (2009), 64.
- 45 McShane and Travaglione, *Organisational behaviour on the Pacific Rim*, 543.
- 46 Kuehn, "Military – NGO Interaction: The Value of Cultural Competence," 10.
- 47 Terriff, "Warriors and Innovators," 216.
- 48 Ibid, 215.
- 49 Ibid, 219.
- 50 Stothard, Talbot, Drobnjak, and Fischer, "Using the DLOQ in a Military Context: Culture Trumps Strategy," *Advances in Developing Human Resources* 15(2) (2013), 196.
- 51 Terriff, "Warriors and Innovators," 239.
- 52 Schein, *Organizational Culture and Leadership* (3rd ed.), (San Francisco: Jossey-Bass, 2004), 26.
- 53 Ibid, 36.
- 54 McShane and Travaglione, *Organisational behaviour on the Pacific Rim*, 543.

- 55 Hill, and Gerras, "Systems of Denial," *Naval War College Review* 69(1) (2016), 110.
- 56 Stothard et al., "Using the DLOQ in a Military Context: Culture Trumps Strategy," 195.
- 57 Cassidy, "The British Army and Counterinsurgency: The Saliency of Military Culture," *Military Review* 85(3) (2005), 53.
- 58 Rotmann, Tohn, and Wharton, "Learning under Fire: Progress and Dissent in the US Military," *Survival* 51(4) (2009), 35.
- 59 Hill and Gerras, "Systems of Denial," 130.
- 60 Stothard et al., "Using the DLOQ in a Military Context: Culture Trumps Strategy," 195.
- 61 Ibid, 194.
- 62 Ibid, 202.
- 63 Rotmann et al., "Learning under Fire: Progress and Dissent in the US Military," 45.
- 64 Ibid.
- 65 Ibid, 34.
- 66 Stothard et al., "Using the DLOQ in a Military Context: Culture Trumps Strategy," 204.
- 67 Ibid, 195.
- 68 Rotmann et al., "Learning under Fire: Progress and Dissent in the US Military," 44.
- 69 Hill and Gerras, "Systems of Denial," 130.
- 70 New Zealand Government, *Health and Safety at Work Act 2015*, Public Act 2015 no. 70.
- 71 New Zealand Defence Force, *Executive overview of the New Zealand Defence Force*, 9.
- 72 Zellman et al., "Implementing policy change in large organizations," in *Sexual orientation and US military personnel policy: Options and assessments*. Cited in Kuehn, "Military – NGO Interaction: The Value of Cultural Competence," 10.
- 73 Derks, Van Laar, and Ellemers, "The Queen Bee Phenomenon: Why Women Leaders Distance Themselves from Junior Women," *The Leadership Quarterly* 27(3) (2016), 457.
- 74 Ellemers, Rink, Derks, and Ryan, "Women in High Places: When and Why Promoting Women into Top Positions Can Harm Them Individually or as a Group (and How to Prevent This)," *Research in Organizational Behavior* 32 (2012), 176.
- 75 Ridgeway, "Gender, Status, and Leadership," *Journal of Social Issues* 57(4) (2001), 637.
- 76 Fox and Pease, "Military Deployment, Masculinity and Trauma: Reviewing the Connections," 17, 21.
- 77 Silva, "A New Generation of Women?" 940.
- 78 Egnell, "Gender Perspectives and Military Effectiveness," 86.
- 79 Ibid, 76.
- 80 Ibid, 75–76.
- 81 Egnell, "Gender Perspectives and Military Effectiveness," 82, 87.
- 82 Dunivin, "Military culture: Change and continuity," *Armed Forces & Society* 20(4) (1994), 543.
- 83 Sahana Dharmapuri, "Implementing UN Security Council Resolution 1325: Putting the Responsibility to Protect into Practice," *Global Responsibility to Protect* 4(2) (2012), 245, 250.
- 84 Dharmapuri, "Implementing UN Security Council Resolution 1325," 244.
- 85 Ibid, 257.
- 86 United Nations Security Council, *Security Council Resolution 1325 (2000) on Women, Peace and Security*, 31 October 2000, S/RES/1325 (2000), 1.
- 87 Le Roy, *Ten-year Impact Study on Implementation of UN Security Council Resolution 1325 (2000) on Women, Peace and Security* (New York, NY: Peacekeeping Best Practices Section, United Nations Department of Peacekeeping Operations, 2010).
- 88 Dharmapuri, "Core Issues Stall Women's Participation in UN Peacekeeping," *The Global Observatory*, March 13, 2013.
- 89 New Zealand Defence Force, *Executive overview of the New Zealand Defence Force*, 10.
- 90 Ibid, 17.
- 91 New Zealand Government. *Human Rights (Women in Armed Forces) Amendment Act 2007*.
- 92 Hipkiss, "Women's vital role in the NZDF," *NewsHub*, Aug 20, 2012.
- 93 Ministry of Defence. *Maximising opportunities for Military Women in the New Zealand Defence Force*, 3.
- 94 Egnell, "Gender Perspectives and Military Effectiveness," 83.
- 95 Ibid, 84.
- 96 Derks, Ellemers, van Laar, and de Groot, "Do Sexist Organizational Cultures Create the Queen Bee?," *British Journal of Social Psychology* 50(3) (2011), 532.

References

- Boyce, L. A., and A. M. Herd. 2003. "The Relationship between Gender Role Stereotypes and Requisite Military Leadership Characteristics." *Sex Roles* 49(7–8) 365–378. doi: 10.1023/A:1025164221364.
- Burnes, B. 2009. *Managing change: A strategic approach to organisational dynamics* (5th ed.). England: Pearson Education.
- Carrola, P. and M. F. Corbin-Burdick. (2015). "Counselling military veterans: Advocating for culturally competent and holistic interventions." *Journal of Mental Health Counselling*, 37(1): 1–14. <http://exproxy.aut.ac.nz/login?url=http://search.proquest.com/docview/1644469775?accountid=8440>.
- Cassidy, R. M. 2005. "The British Army and Counterinsurgency: The Salience of Military Culture." *Military Review* 85(3): 53–59. [http://web.b.ebscohost.com.ezproxy.massey.ac.nz/ehost/resultsadvanced?sid=718cbcd9-19f2-4214-a1db-bafe76b87bf1%40sessionmgr102&vid=9&hid=118&bquery=\(JN+%22Military+Review%22+AND+DT+20050501\)+AND+\(cassidy\)&cbdata=JkF1dGhUeXBIPWlwLGNvb2tpZSx1cmwscWlkjRiPWFwCZ0eXBIPTEmc2l0ZT1laG9zdC1saXZlJnNjb3BIPXNpdGU%3d](http://web.b.ebscohost.com.ezproxy.massey.ac.nz/ehost/resultsadvanced?sid=718cbcd9-19f2-4214-a1db-bafe76b87bf1%40sessionmgr102&vid=9&hid=118&bquery=(JN+%22Military+Review%22+AND+DT+20050501)+AND+(cassidy)&cbdata=JkF1dGhUeXBIPWlwLGNvb2tpZSx1cmwscWlkjRiPWFwCZ0eXBIPTEmc2l0ZT1laG9zdC1saXZlJnNjb3BIPXNpdGU%3d).
- Corey, M. S., G. Corey and C. Corey. 2014. *Groups: Process and practices* (9th ed.). Belmont, CA: Brooks/Cole.
- Derks, B., N. Ellemers, C. van Laar, and K. de Groot. 2011. "Do Sexist Organizational Cultures Create the Queen Bee?" *British Journal of Social Psychology* 50(3): 519–535. doi: 10.1348/014466610X525280.
- Derks, B., C. van Laar and N. Ellemers. 2016. "The Queen Bee Phenomenon: Why Women Leaders Distance Themselves from Junior Women." *The Leadership Quarterly* 27(3): 456–69. doi: 10.1016/j.leaqua.2015.12.007.
- Dharmapuri, S. 2013. "Core Issues Stall Women's Participation in UN Peacekeeping." *The Global Observatory*, March 13, 2013. <https://theglobalobservatory.org/2013/03/core-issues-stall-womens-participation-in-un-peacekeeping/>
- Dharmapuri, S. 2012. "Implementing UN Security Council Resolution 1325: Putting the Responsibility to Protect into Practice." *Global Responsibility to Protect* 4(2): 241–72. doi: 10.1163/187598412x639728.
- Dunivin, K. O. 1994. "Military Culture: Change and Continuity." *Armed Forces & Society* 20(4) (1994): 531–547. <http://afs.sagepub.com.ezproxy.massey.ac.nz/content/20/4/531.full.pdf>.
- Egnell, R. 2016. "Gender Perspectives and Military Effectiveness: Implementing UNSCR 1325 and the National Action Plan on Women, Peace, and Security." *Prism: A Journal of the Center for Complex Operations* 6(1): 72–89. <https://www.inclusivesecurity.org/wp-content/uploads/2016/03/Gender-Perspectives-and-Military-Effectiveness.pdf>.
- Ellemers, N., F. Rink, B. Derks, and M. K. Ryan. 2012. "Women in High Places: When and Why Promoting Women into Top Positions Can Harm Them Individually or as a Group (and How to Prevent This)." *Research in Organizational Behavior* 32: 163–187. doi: 10.1016/j.riob.2012.10.003.
- Evans, M. 2009. "The Twenty-First Century Security Environment: Challenges for Joint Forces." *The RUSI Journal* 154(2): 64–72. doi: 10.1080/03071840902965752.
- Fox, J. and R. Pease. 2012. "Military Deployment, Masculinity and Trauma: Reviewing the Connections." *Journal of Men's Studies* 20(1): 16–31. doi: 10.3149/jms.2001.16.
- Hall, L. K. 2011. "The importance of understanding military culture." *Social Work in Health Care*, 50(1): 4–18. doi: 10.1080/00981389.2010.513914.
- Hill, A. and S. Gerrass. 2016. "Systems of Denial." *Naval War College Review* 69(1) (2016): 109–132. <http://eds.a.ebscohost.com.ezproxy.massey.ac.nz/eds/pdfviewer/pdfviewer?vid=2&sid=29fc9781-a3ee-4547-93f1-5317d62922e4%40sessionmgr4004&hid=4211>.
- Hipkiss, I. 2012. "Women's vital role in the NZDF." *NewsHub*, August 20. <http://www.newshub.co.nz/nznews/womens-vital-role-in-the-nzdf-2012082016>.
- Kuehn, F. E. "Military – NGO Interaction: The Value of Cultural Competence." Master's thesis, Marine Corps University, 2013. <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA603704>.
- Le Roy, A. 2010. *Ten-year Impact Study on Implementation of UN Security Council Resolution 1325 (2000) on Women, Peace and Security*. New York, NY: Peacekeeping Best Practices Section United Nations Department of Peacekeeping Operations. http://www.un.org/en/peacekeeping/documents/10year_impact_study_1325.pdf.
- McShane, S. and A. Travaglione. 2007. *Organisational behaviour on the Pacific Rim*. Australia: McGraw-Hill Higher Education.
- Ministry of Defence. 2014. *Maximising Opportunities for Military Women in the New Zealand Defence Force*. Wellington, NZ: Evaluation Division, Ministry of Defence. <http://www.nzdf.mil.nz/downloads/pdf/public-docs/2014/maximising-opportunities-military-women-nzdf.pdf>.
- New Zealand Army. 2010. *The way of the New Zealand Warrior*. Wellington, New Zealand: New Zealand Army. <http://www.army.mil.nz/downloads/pdf/public-docs/2013/way-of-the-nz-warrior.pdf>.
- New Zealand Defence Force. 2013. *Executive overview of the New Zealand Defence Force*. Wellington, New Zealand: New Zealand Defence Force. <http://www.nzdf.mil.nz/downloads/pdf/public-docs/2013/executive-overview-of-the-defence-force.pdf>.

- New Zealand Defence Force. 2015. *New Zealand Defence Force 2015–2018 Statement of Intent*. Wellington, New Zealand: New Zealand Defence Force. http://www.nzdf.mil.nz/downloads/pdf/public-docs/nzdf_soi_2015.pdf.
- "New Zealand Demographics Profile 2014," Indexmundi.com. Accessed September 21, 2016. http://www.indexmundi.com/new_zealand/demographics_profile.html.
- New Zealand Government. 2015. *Health and Safety at Work Act 2015*, Public Act 2015 no. 70. Wellington. <http://www.legislation.govt.nz/act/public/2015/0070/latest/DLM5976660.html>.
- New Zealand Government. 2007. *Human Rights (Women in Armed Forces) Amendment Act 2007*. <http://www.legislation.co.nz/act/public/2007/0016/latest/whole.html>.
- Perito, R. M. 2007. *Guide for participants in peace, stability, and relief operations*. Washington, DC: US Institute of Peace Press. <http://pksoi.army.mil/default/assets/File/Guide-text.pdf>.
- Reger, M. A., J. R. Etherage, G. M. Reger, and G. A. Gahm. 2008. "Civilian psychologists in an Army culture: The ethical challenge of cultural competence." *Military Psychology* 20: 21–35. doi: 10.1080/08995600701753144.
- Ridgeway, C. L. 2001. "Gender, Status, and Leadership." *Journal of Social Issues* 57(4): 637–655. doi: 10.1111/0022-4537.00233.
- Rosen, S. P. 1995. "Military effectiveness: Why society matters." *International Security* 19(4): 5–31. <http://www.jstor.org/stable/2539118>.
- Rotmann, P., D. Tohn, and J. Wharton. 2009. "Learning under Fire: Progress and Dissent in the US Military." *Survival* 51(4): 31–48. doi: 10.1080/00396330903168824.
- Schein, E. H. 2004. *Organizational Culture and Leadership* (3rd ed.). San Francisco: Jossey-Bass. https://books-google-co-nz.ezproxy.massey.ac.nz/books?hl=en&dr=&id=xhmezdDokfnYC&oi=fnd&xpg=PR11&dq=schein+culture&ots=m6LV7O1bpL&sig=LRlv6gaoe6GxHEL_H_JgELzRTOs#v=onepage&q=schein%20culture&cf=false.
- Seiple, C. 1997. "The U.S. Military/NGO Relationship in Humanitarian Interventions." Carlisle Barracks, PA: Strategic Studies Institute, US Army War College. <http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA308675>.
- Shils, E. 1991. "The virtue of civil society." *Government and Opposition* 26(1): 3–20. <https://www-cambridge-org.ezproxy.massey.ac.nz/core/services/aop-cambridge-core/content/view/3AE64DADC8CEBB16A56F9BAE6CA76BF8/S0017257X00009660a.pdf/the-virtue-of-civil-society.pdf>.
- Silva, J. M. 2008. "A New Generation of Women? How Female ROTC Cadets Negotiate the Tension between Masculine Military Culture and Traditional Femininity." *Social Forces* (University of North Carolina Press) 87(2): 937–960. doi: 10.1353/sof.0.0138.
- Statistics New Zealand. 2015. *New Zealand in profile 2015: An overview of New Zealand's people, economy and environment*. New Zealand Government. http://www.stats.govt.nz/browse_for_stats/snapshots-of-nz/nz-in-profile-2015.aspx.
- Stothard, C., S. Talbot, M. Drobnjak, and T. Fischer. 2013. "Using the DLOQ in a Military Context: Culture Trumps Strategy." *Advances in Developing Human Resources* 15(2): 193–206. doi: 10.1177/1523422313477592.
- Taylor, R. 1996. *Tribe of the God of War: Ngati Tumatauenga*. Napier, NZ: Heritage – New Zealand.
- Terriff, T. 2006. "Warriors and innovators: Military change and organizational culture in the US Marine Corps." *Defence Studies* 6(2): 215–247. doi: 10.1080/14702430601056139.
- United Nations Security Council. 2000. *Security Council resolution 1325 (2000) on Women and Peace and Security*. 31 October 2000, S/RES/1325. [http://www.un.org/en/ga/search/view_doc.asp?symbol=S/RES/1325\(2000\)](http://www.un.org/en/ga/search/view_doc.asp?symbol=S/RES/1325(2000)).
- Wolfe, J. 2015. "Armed forces – Historical overview" in Te Ara – The Encyclopedia of New Zealand, www.teara.govt.nz. Dated February 2, 2015. Accessed May 11, 2015. <http://www.teara.govt.nz/en/graph/35716/defence-force-personnel-by-gender-and-ethnicity-2012>.
- Wilson, P. H. 2008. "Defining military culture." *The Journal of Military History*, 72(1): 11–41. doi: 10.1353/jmh.2008.0041.



A MILITARY PEDAGOGICAL APPROACH: TRAIN AND DEVELOP FOR CERTAINTY, EDUCATE FOR UNCERTAINTY

By Miss Diana Shirley

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Why should we entertain the thought of having a military education system that simultaneously values higher education and development of life-long learners; while delivering educational programs that are focused on enabling the New Zealand Defence Force to better adapt to strategic, operational and tactical challenges? How do educational programmes that aim to develop excellent war fighters fit into an education pedagogical philosophy, if at all?

Pedagogy is the art of teaching and learning. Military pedagogy reflects the complexity of modern adaptive military tasks, ethics, morale, military education and engagement. Royl (2002) describes military pedagogy as “the demand to both locate and define the present state of the art of war and the lines of natural expectation; and to be able to change or transform war fighting methods in order to make progress instead of repeating the habits of the past” (as cited in Annen, 2002, p. 28). In other words, our educational landscape within the New Zealand Defence Force (NZDF) should continuously adapt to the needs of the NZDF and its personnel, and not the other way around.

There are two distinct contexts in which military pedagogy is different from other education pedagogies. Firstly, military pedagogy requires that the teaching and learning take place in a military setting. Secondly, military pedagogy applies to situations in which the teaching and learning is for military purposes.

According to Schunk & Nielsson (2007), military pedagogy is applied in the following context:

1. Military personnel are willing to cooperate during military education and training, which means that during the process of

knowledge acquisition they are more likely to adapt in order to gain proficiency.

2. Personnel are trained to survive and work under extreme conditions.
3. Personnel must be able to carry out their duties effectively and efficiently.
4. Personnel are considered adults undertaking military tasks as an armed force.
5. Instructors are not always trained to instruct; they are subject matter experts, administrators and tactical commanders (they are generally uniformed military personnel), but may not necessarily be full-time instructors.

What is Military Pedagogy?

Juhary (2014) states that military pedagogy is one of the “military sciences that looks into the philosophies, conceptions, visions, doctrines, aims, approaches, and technologies of military education and training” (p. 1256). Juhary (2014) explains that the role of military pedagogy will increase due to the demands of higher education opportunities for military personnel. The Danish military defines military pedagogy as a tool to solve problems related to learning for military education and training (Schunk & Nielsson, 2007). According to Schunk and Nielsson (2007), the term military pedagogy is in principle no different from normal pedagogy. However, there are unique characteristics that differentiate military pedagogy from other pedagogy.

Characteristics of Military Pedagogy

1. Besides proficiency and knowledge, military training aims to ensure the acquisition of certain qualities including morale in combat,

MILITARY PEDAGOGY IN CONTEXT

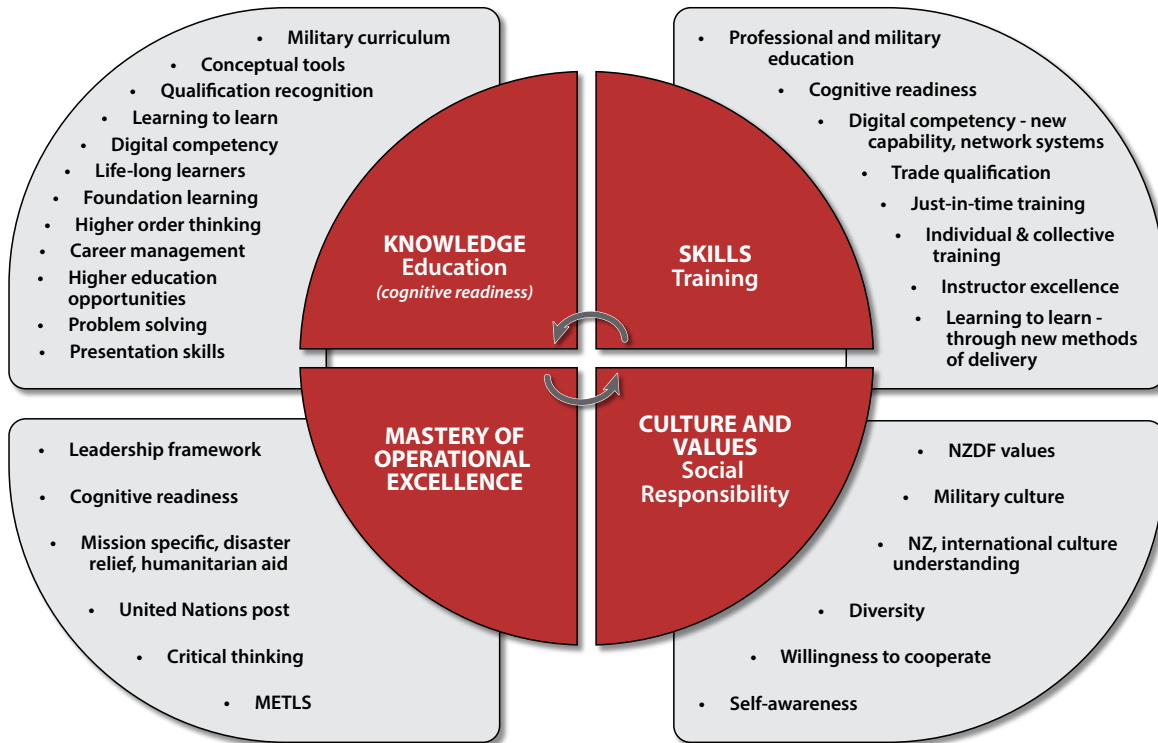


Figure 1: Example of Contextualising an NZDF Military Pedagogy

- motivation and loyalty. These characteristics are linked to the willingness and ability of individuals to cooperate.
- Military units must be fit to undertake and carry out tasks under conditions of extreme strain. Military forces operate on battlefields, in high-pressure international training environments and in extreme climates and terrains.
- It is the military unit that must be made fit to carry out tasks through education and training. The unit's function is the primary driver of training, whereas the objectives for the training of the individual military personnel are determined by his or her function within the unit.
- Military personnel under training are adults. This feature is tied to the departure point, and represents an advantage for military pedagogy in that maturity can be assumed, which is a condition for learning to a higher degree.
- Instructors normally have other functions besides their pedagogic tasks. They can also be tactical commanders and administrators.
- Military training is conducted in a diverse environment, with varying levels of cognitive ability, learning skills, prior knowledge, learning preferences or methods. The context, method of delivery, structure of the training, relevance and just-in-time nature will vary according to the operational task or instruction taking place (Schunk & Nielsson, 2007).

What does Military Pedagogy Achieve?

International threats to security have become more agile and unpredictable, so our military is required to be adaptable, prepared for the unexpected, and in possession of higher order thinking, cognitive and operational readiness. "The only thing certain about the future is that it is impossible to predict. The only logical strategy is to be ready for anything" (Future 20/20).

NZDF military training and education is effective, but is also moving away from its current industrial model of training and education in response to the changing environment and to the speed and complexity that our personnel are faced with on a daily basis. However, the risk is that ongoing adaptation and training for the sake of training will exhaust resources and minimise the effectiveness of learning. The risk of not adopting a New Zealand military pedagogical approach (where all training and education is mapped and where, for example, leadership culture, sustainability, ethos and values, are embedded under one educational umbrella) is that NZDF personnel will continue to be considered as nothing more than a 'car being manufactured on a processing line'.

Secondly, by not adopting a military pedagogy approach the NZDF will continue to have projects working in silos and not coordinated under the one framework for the one purpose – military excellence. If we continue to do the same thing, we will get the same results. Early results from various projects (including analysis on who are our learners e.g. foundation learning, Joint Instructor Excellence; adult learning programs e.g. literacy and numeracy), Joint Professional Military Education (JPME) and network support systems have identified that there is a gap in learning programs. If the gap continues to be ignored, instructors and NZDF schools will continue to carry the risk.

Military education and training is the prime focus of military pedagogical theory. Adopting a military pedagogy philosophy aligns NZDF with Future 20/20: better tools, better support, better information and better strategies towards military excellence. Dedication to military excellence will involve aligning projects, including foundation learning, instructor excellence and the provision of qualifications (whether aligned under Defence Proficiency Military Excellence or external qualifications), under one framework. It will also require commitment to reaffirming the value of education and training in a military context.

By adopting a military pedagogy approach within the NZDF, there is greater need to adopt a curriculum framework that includes professional education specialists. These specialists will continue to support and develop instructor competencies, foundation learning opportunities and higher order thinking skills embedded into all areas of training, in order to support operational and cognitive readiness and to produce adaptable war fighters.

Military Pedagogy as a Determinant of Professional Mastery

Military pedagogy is a determinant for embedding professional mastery into training that includes the cultivation of skills and knowledge needed to take effective action in response to changing circumstances. The concept also includes developing judgment that is based on appropriate individual and organisational experience and values. An individual who is said to possess professional mastery:

1. understands and acquires the necessary knowledge as the basis for sensible action;
2. has a set of professional values against which to determine right and wrong;
3. understands the practice of their profession in a wide range of difficult circumstances;
4. is able to employ skills and knowledge for creativity;
5. understands the importance and value of working with others; and
6. has the ability to manage their own life, to cope with the prevailing environment, to profit from experience, to reach sensible decisions and to act on them.

Professional mastery is defined as integrating all the components of being a war fighter. It is an expression of personal competence displayed by an individual's ability to combine character, self-confidence, effective leadership, professional knowledge, professional military judgement and experience. It is measured by performance in battle and is a process of continual learning developed through education, training and experience. The most critical ingredient for success is the human element: how well personnel adapt to challenges and their environment.

Training and education is a foundational aspect to the intellectual component of warrior culture. Implicit in this description is the idea that professional mastery is a state that changes as individuals continually learn and interact with their environment. It presupposes that individuals not only have the ability to perform their functions competently, but also that they have an awareness

of why their functions are necessary, along with the flexibility and confidence to perform them in a range of circumstances.

Individual Contribution to Professional Mastery

At its most abstract, professional mastery is the demonstrated level of skill applied to the art and science of war. People are the intellectual component of warfighting capability within the NZDF. They generate the innovative concepts and solutions to challenges. When the organisation provides opportunity through leadership, its people provide the potential and drive to take advantage of those opportunities.

On a more practical level, professional mastery is an expression of how an individual applies the skills, knowledge and attitudes developed through education, training and experience to meet the requirements of the task at hand. Individual professional mastery forms the basis of NZDF's collective professional mastery, in which excellence in all aspects of the profession of arms creates a unified field of applied knowledge. Each learner's progression is tracked electronically over their career. Managers and individuals identify gaps and align educational opportunities against the framework.

A military pedagogy will shape the lineal framework for professional mastery. When an organisation and managers set expectations and have transparent frameworks in place, then individuals are more likely to take responsibility for learning and become self-directed in seeking knowledge. Even when professional progression may not be their desire, the organisation strongly advocates further education, to empower them to be lifelong learners and informed citizens.

Breaking Down Professional Mastery

At the basic level within the NZDF, professional mastery will flag key competencies that are learnt through military training and education activities. These competencies are the ability to perform activities within an occupation, function or role to the standard required. The concept of competency relates to the ability to perform a task in the workplace (the expected outcome), rather than

the process of acquiring the necessary skills (the learning process). It embodies the ability to transfer and apply skills, knowledge and attributes to new situations and environments.

Through military training and education these competencies foster the skills, knowledge and attributes in individuals and teams necessary to fight and win in the modern battlespace. Train and develop for certainty, educate for uncertainty. Quality training and education ensures our personnel are able to carry out their tasks and responsibilities to the required standard of performance so the organisation can successfully fulfil its role.

Education assists personnel to shift from tactical, operational and strategic views to a holistic view. For NZDF, individual training, education and development of its personnel involves the following:

1. Individual vocational education and training for induction, employment and to support the introduction of new capabilities.
2. Language, literacy and numeracy, including general secondary education (Year 12 or equivalent), to meet the professional entry requirements.
3. Higher education to prepare individuals for specialist and career appointments; refresher and continuation training to maintain competency.
4. Cross-training and multi-skilling to improve efficiency and to provide job enrichment.
5. Career transition and resettlement to prepare individuals for careers outside the NZDF.

Characteristics of Effective Training and Education

The characteristics of effective training and education are the same in any organisation. Regardless of the level at which it is developed or implemented, effective training has the following broad characteristics:

1. It is based on clearly articulated and relevant training objectives.

2. It progressively builds professional mastery in accordance with NZDF's training and education continuum.
3. It develops the skills, knowledge and attributes required for successful performance on operations.
4. It develops the skills, knowledge and attributes required for successful performance on operations.
5. It is task-oriented to the greatest extent possible.
6. It simulates operational conditions wherever possible.
7. It makes efficient use of available time and resources; employs a wide range of techniques to maintain interest and emphasises practical activities at an appropriate level of complexity.

Conclusion

All NZDF personnel are vital links in a larger chain. The strength of the chain is dependent on the quality of each individual in training. Training

and education aims to, firstly, modify or change an individual's or group's level of competency for a particular task. Secondly, it seeks to continually improve the processes used to train individuals or groups to meet various military requirements. Finally, the NZDF is a unique organisation that should not be classified under 'classical' education categories. The NZDF should define its own pedagogy. By defining its military pedagogy, NZDF will be able to apply systematic methods and processes to develop the people who will build, maintain, enhance and apply military capability. By its very nature, military pedagogy provides training and education that is dynamic and must be fostered and encouraged to permeate all levels of the organisation. Training and education is the means by which personnel acquire the competencies and beliefs that affect their behaviour and ability to perform.

The enduring challenge confronting NZDF is to train to be successful in future operations. In other words, NZDF requires our war fighters to be agile thinkers and adaptable decision-makers. This high level of professionalism can be achieved through the maintenance of high levels of training that is attained through well-planned application of training, education and development activities to an individual in accordance with NZDF's operational requirements, their career requirements and their own individual desires.

References

Annen, H. 2002. "Action Research as a Method for Scientific Thinking and Acting in Military Pedagogy." In *Military Pedagogy – An International Survey*, edited by H. Florian. Frankfurt, Switzerland: Peter Lang Publishing. 227.

Australian Army 2004. LWD 7-1 *Individual Training Developing Doctrine*. Australia: Australian Army.

Ercil, Y. and K. Varoglu. 2002. "Mental Models and Learning Processes." In *Military Pedagogy – An International Survey*, edited by H. Florian. Frankfurt, Switzerland: Peter Lang Publishing. 211. (Turkey).

Fletcher, J.D. & Morrison, J. "Cognitive Readiness". In *Military Pedagogy – An International Survey*, edited by H. Florian. Frankfurt, Switzerland: Peter Lang Publishing. 165. (USA).

Florian, H. 2002. "Military Pedagogy. A Pragmatic Approach". In *Military Pedagogy – An International Survey*, edited by H. Florian. Frankfurt, Switzerland: Peter Lang Publishing. 47–66. (Austria).

Hartmann, U. 2002. "Military Pedagogy in a Changing World; A German view." In *Military Pedagogy – An International Survey*, edited by H. Florian. Frankfurt, Switzerland: Peter Lang Publishing. 69–82. (Germany).

Juhary, J. 2014. *Understanding Military Pedagogy*. 5th World Conference on Learning, Teaching and Education Leadership, WCLTA. (Malaysia).

Mattson, P. 2002. "The Rise of Military Pedagogy; A study of the Swedish Military Pedagogy of the 1920s." In *Military Pedagogy – An International Survey*, edited by H. Florian. Frankfurt, Switzerland: Peter Lang Publishing. 143. (Sweden).

Schunk, L. and Nielsson, L. 2002. "Danish Approach to Military Pedagogy." In *Military Pedagogy – An International Survey*, edited by H. Florian. Frankfurt, Switzerland: Peter Lang Publishing. 11–28. (Denmark).

Toiskallio, J. (2003). "Towards a Military Pedagogy and Action Consequence." In *Civil-Military Aspects of Military Ethics Vol 1* edited by E.R. Micewski. Frankfurt, Switzerland: Verlag 52–64. (Finland).

Van Ree, A. "Towards a military Pedagogy; A survey on the prospects and characteristics of Military Pedagogy in the Netherlands." In *Military Pedagogy – An International Survey*, edited by H. Florian. Frankfurt, Switzerland: Peter Lang Publishing. 29–46. (Netherlands).

Varoglu, K. & Ercil, Y. "The Impact of National Culture on Military Pedagogy." In *Military Pedagogy – An International Survey*, edited by H. Florian. Frankfurt, Switzerland: Peter Lang Publishing. 101. (Turkey).





STABILITY CENTRE OF GRAVITY: PLANNING WITH A BLANK SHEET OF PAPER

By Lieutenant Colonel Terry McDonald

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Introduction

Imagine sitting in your office on a brigade headquarters, battalion staff or as a company commander and the telephone rings with a message to tell you that two island nations in the South Pacific have declared a state of emergency; you are to start preparing for a Humanitarian Assistance Disaster Relief (HADR) mission. You are vaguely aware of the countries and their capabilities, but you know very little about them or how you might be able to assist, essentially you start planning on a blank sheet of paper. This is the situation New Zealand Army engineers were in when, in October 2011, the nations of Tuvalu and Tokelau requested assistance to overcome a debilitating drought that threatened to turn into a major humanitarian issue. The scenario may seem distant and one that US planners may not be able to relate to, however, many of the key planning processes that we, as military commanders and planners use, are tested by this kind of unexpected scenario. The ability to lodge, rely on host nation support and the tyranny of distance all impact what could be a very real situation given the US Pacific rebalance. So how do we look at these problems? How can we attempt to understand the dynamic environment with many internal and external pressures affecting the operation? The use of the centre of gravity (COG) construct allows for stability centric complex problems to be understood in an environment that military forces may not be used to.

The last decade of persistent conflict has provided western military forces with significant experience in how to undertake operations in the Middle Eastern environment. In addition, there is at least a doctrinal foundation of how to conduct

conventional force on force operations (offence or defence), however, the other piece of the operational triad remains ambiguous (that is non-kinetic) stability operations. Whatever shape future conflict may take, an urbanizing global population along with climate change will likely see a higher number of stability operations, potentially with an HADR focus.

Carl von Clausewitz in his treatise *On War* explains that friction is an enduring component on the battlefield; while we plan for wars to be short and decisive, this may not always be the case as fog and friction are enduring, which often impacts the objectives and ultimately the final outcomes. COG analysis provides a way of thinking to understand complex systems that influence, either directly or indirectly, an area of operations thereby allowing commanders to develop relevant Lines of Effort (LOE) for mission success. The use of this construct enables military forces to target the key critical components of an adversary, theoretically allowing operations to transition in the most efficient way.

Clausewitz explains that the centre of gravity analogy is underpinned by a concentration of either a force or forces and their cohesion; essentially that nature seeks equilibrium and COG provides a metaphor to explain that the balance can change depending on either internal movements or external pressures.¹ He also critically identifies that the use of force against the COG needs to be carefully considered because a miscalculation of the impact on the equilibrium could 'waste energy, which in turn means a lack of strength elsewhere'.² The potential for wasted energy is equally relevant during HADR efforts and it is in this context that this article explores COG, both to understand the broad implications of the use of military assets, as well as conserving effort to ensure a broad strategic effect across a spectrum of tasks.

It is the aim of this paper to outline a method that commanders can utilise to identify the relevant LOE in order to link the considerations of stability operations into practical application. How do commanders practically plan for stability operations to succeed, particularly given the congestion of agencies and actors within an operating environment?

What Are We Doing and Why Do We Need It?

Stability operations play an integral role within wider military operations, and doctrine exists to support the linear planning of such operations, such as the Military Decision Making Process (MDMP) and more recently Design.³ Although this doctrine is comprehensive, it does not necessarily enable a commander or staff to maintain situational awareness facilitating situational understanding. Since these processes are theoretically not a linear process, rather a constantly evolving one, often the urgent surpasses the important and the crucial feedback loop does not occur. This is particularly relevant given the role of the broad spectrum of other actors that will either resolve the situation at hand or assist the military to a successful conclusion. Further, practical limitations such as port/airfield capabilities and host nation infrastructure could limit the type and numbers of relief assets on the ground. The contemporary operating environment has a multitude of organisations that potentially may increase friction in the conduct of military operations. To be able to visualise the role that these organisations may play will assist in identifying economy of force opportunities and reducing duplication. Within this framework, adaptation of the COG analysis may provide insights to military commanders that enable effective application of Decisive Action⁴ doctrine, managing the situational awareness and situational understanding relationship within ill structured or evolving problem sets.⁵

Centre Of Gravity in Stability Operations

So how can military commanders and their staff practically apply COG analysis in stability operations? ADRP 3-07 *Stability* explains how the military should strive for a 'comprehensive approach'⁶ where "the capabilities of the disparate actors [are leveraged], to achieve broad conflict transformation

goals and attain a sustainable peace".⁷ The overall COG analysis can be augmented by lower echelons COG analysis, for their specific geographic area, to provide a more comprehensive articulation of what the LOE should be. It also enables lower echelons to understand the broader issues and better develop their Lines of Operations (LOO) to achieve their mission. It will enable better focus and a situationally appropriate response. A shared understanding between units and their respective higher headquarters will enable staff to link LOE and nest the approaches into the overall COG analysis. What is relevant in one province, city or block may not be relevant in another.

Turning now to the components and construction of the COG analysis, there are various ways that professionals can view COG; the example provided is one way, but not the only way. In this approach the first step is determining the COG. This is achieved by leveraging the stability mechanism that is appropriate (or assigned) to the situation faced within an area of operation (AO). It could also be derived from the military end state or set of conditions that are determined prior to a mission being undertaken with either political, humanitarian or military goals in mind. The COG is likely to remain abstract; however, the withdrawal criteria for military forces are defined or at least identified by military commanders prior to the mission. The determination of the COG could occur at the outset, if known, or could be determined as a product of the wider analysis.

The next requirement is to determine the Critical Capabilities that either flow from the COG or are required within an AO. The determined capabilities then form the basis of the LOE in the overall plan. For example, the LOE in a stability or peace operation could be very simplistic, such as water, food, shelter, medical, evacuation etc. Each of these LOE may not be achieved purely (or by any) military element. By understanding how other actors in the operation interact with the host nation capabilities, a commander can better understand how they can support the successful conclusion of the military operation.

The Critical Requirements are the key objectives/tasks/facets along the LOE that ensure mission success or defined desired conditions to achieve or maintain. These could be simple, short duration single events or could be complex actions involving multi-agency interactions over an extended period.

Understanding how they link and interact across the LOE will enable better synchronisation of effort. Military forces may not complete them, however, understanding *how* they will be achieved provides context to their impacts. These could include military tasks requiring delay and implications on host nation resource availability.

Finally, the Critical Vulnerabilities are facets of the operation that require resourcing, protection or acknowledgment as risk. These link through the critical requirements and capabilities, but may not necessarily, in a HADR operation, be ‘military vulnerabilities’ as defined in the context of conventional operations. The ‘vulnerabilities’ could include areas of the operation where host nation support is deemed to be functioning to a sufficient level, as such, little focus is given to it and the actual vulnerability is our inability to affect it. While the response post-disaster is ultimately the remit of the host nation government, how additional resources provided are prioritised or distributed may not necessarily align with the actual population needs or best practice, which can have a negative effect on forces supporting the HADR mission. The preponderance of military resources should be allocated to the identified vulnerabilities or host

nation ‘gaps’ to mitigate mission risk. This could also include areas where mentorship or limited assistance is provided to other actors to enable overall mission success.

The diagrams outlined below demonstrate how the approach works (Figure 1 and 2).⁸

Why This Approach?

While the approach appears simplistic and heavily doctrinal, it provides a start point for planners deploying into an immature or maturing environment, particularly if they have limited experience in stability operations. It enables commanders and planners to translate conceptual (and at times abstract) thought into a practical model for progress. It can provide commanders the ability to undertake collaborative planning with other actors within the AO to achieve ‘buy-in’ as well as focus efforts, which will in turn provide a unity of effort to the mission. These actors are not necessarily government agencies; therefore, a common approach towards LOE development could engender support across non-governmental agencies that have previously worked with military forces in other environments.

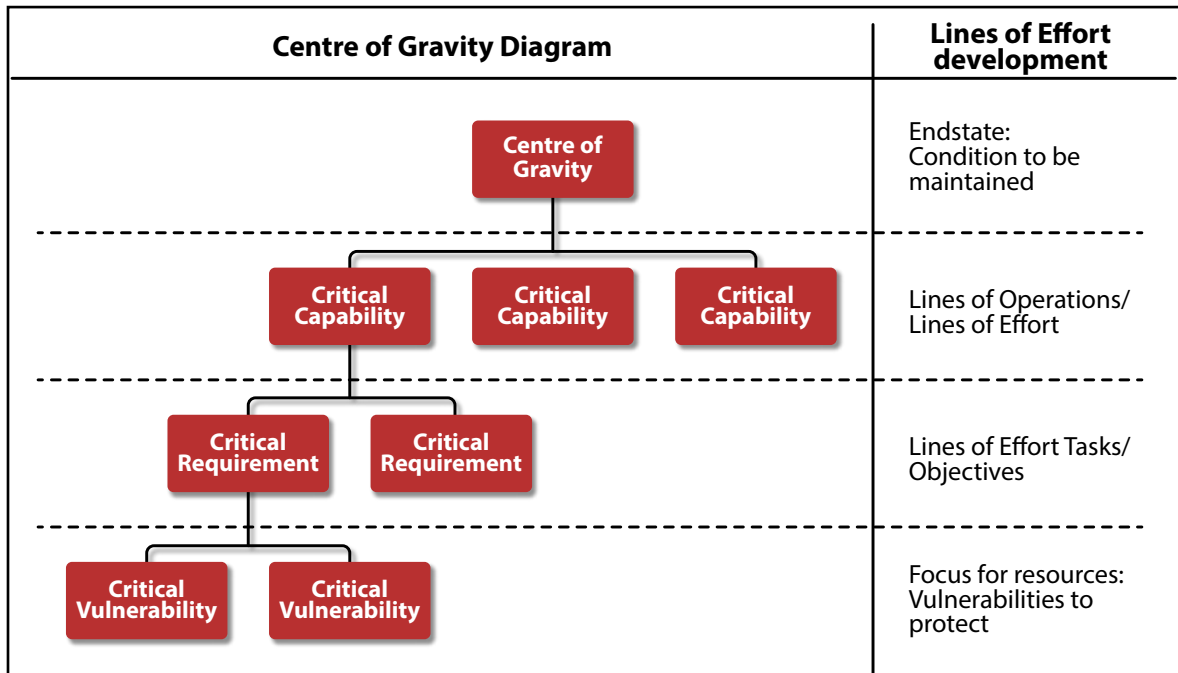


Figure 1: Centre of Gravity Development as Lines of Effort

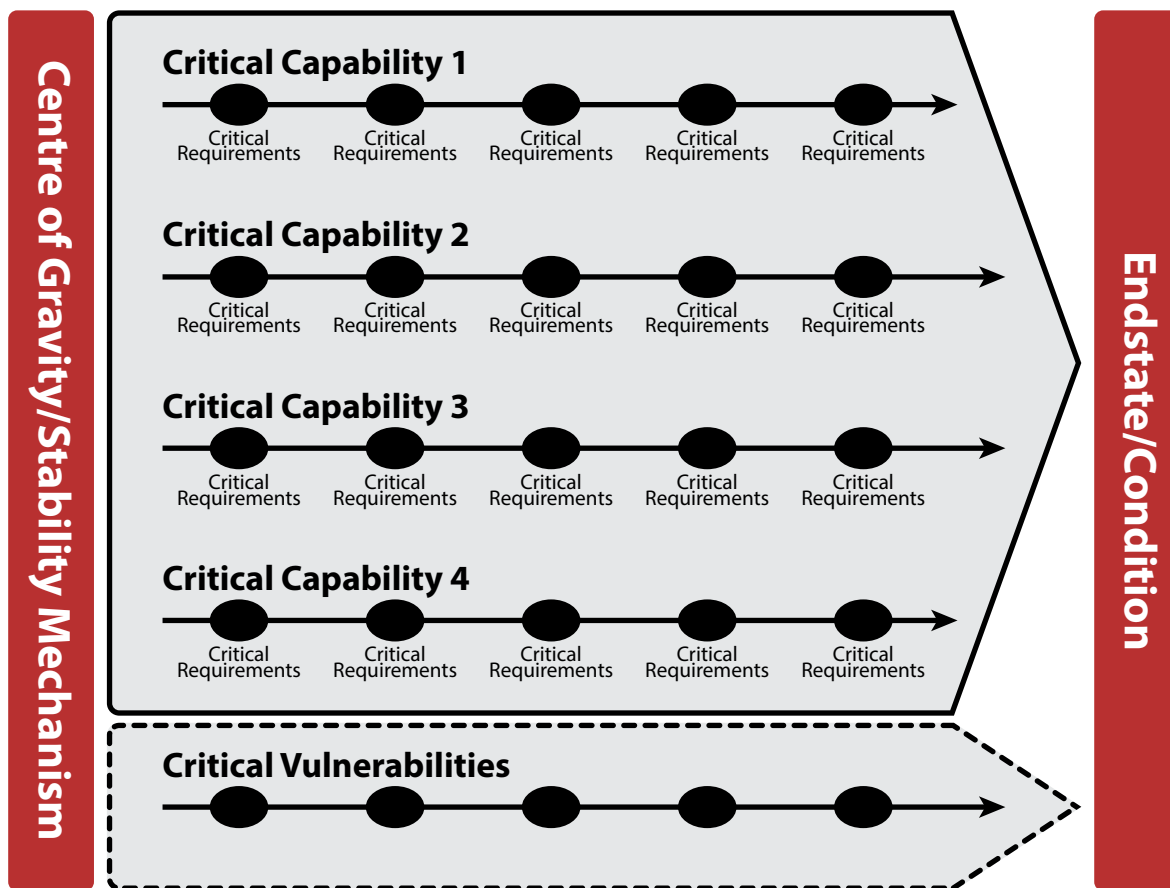


Figure 2: Centre of Gravity Translated into Lines of Effort

The approach should not be used in isolation, similar to LOE in counterinsurgency (COIN) operations, it serves as a base plan, however, it should be adjusted depending on changing circumstances. Furthermore, it requires wider thought below brigade level to allow subordinate commanders the flexibility to adjust and adapt to the situation. This is already occurring in COIN environments, however stability operations, such as HADR, may require independent company operations where this approach can be used. The use of this methodology will enable the battalion commander, higher headquarters staff and other key stakeholders to understand the operational approach that will be taken and to what end.

Pacific Drought – 2011

The easiest way to demonstrate the utility of such an approach is through an example. In the introduction to this article, a scenario was

articulated that involved the deployment of military forces to support the island nations of Tuvalu and Tokelau who had declared a state of emergency due to a debilitating drought. The example will focus on the Tuvalu relief effort, which is not to denigrate the work conducted in Tokelau by the United States Coast Guard, New Zealand Defence Force (NZDF) and the Australian Defence Force (ADF). However, the operational complexity in Tuvalu was somewhat greater due to the significantly larger population and interagency/international actors involved.

Tuvalu is an island nation consisting of nine atolls located approximately halfway between Hawaii and Australia.⁹ The atolls are 26 square kilometres combined, and the major atoll of Funafuti, which is also the nation's capital, consists of 30 small islands with a total landmass of 2.94 square kilometres.¹⁰ Funafuti, with a population base of 4,492, was the focal point of the relief effort as it has an airfield,

port and the preponderance of the population.¹¹ To place this into context, it is about the same size as Maui in the Hawaiian Islands. The island is low lying, and at its highest point is 0.5 metres above sea level, which precludes potable ground water supply. The primary water supply for the island is via rainwater capture and desalination. At the time of the state of emergency declaration, there had been no significant rainfall for six months with none predicted for a further two because of a weather phenomenon known as the 'La Niña'.¹² The existing desalination equipment on the island was not producing potable water to capacity due to a lack of spare parts and age; it was on the verge of failing.

The effects of the drought were severe. Water for the people on Funafuti, rationed to 20 litres of potable water per day per family, regardless of the size of family, some in excess of 11 people. The relatively small agricultural industry was under threat given the lack of water to keep crops hydrated. At the time the state of emergency was declared it was estimated that there were less than two days of water remaining on the main island. On at least one of the outer islands reports were that supplies were down to just tens of litres of water before the Red Cross arrived with small portable desalination units.

New Zealand, in conjunction with the Government of Tuvalu (GoT) and other non-governmental organisations (NGOs) organised a relief effort, which included elements of the NZDF in support of the diplomatic element of national power. Other nation and NGO contributors included the United States, Australia, the International Committee of the Red Cross and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) based in Suva. While not articulated formally, clear end-state and retrograde criteria were developed between the New Zealand Ministry of Foreign Affairs and Trade (NZ MFAT) and the NZDF prior to the relief effort. In general terms the criteria was, in support of the GoT, to provide up to 30 days of potable water and remain in situ until sufficient desalination equipment was in place to provide the populace a minimum of Social and Public Health Economics Research Group (SPHERE) standard daily consumption rates.¹³ Many influencing factors that cannot be adequately articulated within this scenario existed, however, the situation was dire for the nation.

In developing a COG analysis for this situation, the components are not exhaustive. Regardless, the

COG was determined as the 'health and well-being of the Tuvalu population'. There were several critical capabilities that were considered for mission success:

- » the provision of potable water to the population,
- » the public health of the population,
- » ensuring ongoing food security,
- » coordinating the disaster response, and finally,
- » the maintenance of the force.

Each of these critical capabilities has their own critical requirements and critical vulnerabilities, as demonstrated in Figure 3.

The critical requirements have been color coded to reflect the amount of impact or control the military force could have over them. Green indicates military direct influence, where orange reflects either GoT or NGO lead roles with military support, and finally red shows where no military effect could achieve a decisive effect in support of the task. The COG analysis shows the key effects to be achieved to allow the conditions to be set prior to the retrograde of military forces and enable a broad understanding of progress within the overall operation. Each specific objective consists of its own measures of effectiveness or measures of performance, as have been developed on other contemporary operations.

This model was not used during the case study scenario; rather, it is with the use of hindsight that the utility of this model has become clear. The use of the construct would have allowed indicative tasks to be identified, enabling the targeted deployment of capability to ensure the minimum footprint, thereby reducing the dependency on the island nation's resources. In the case study, there were restrictions enforced on landing on the atoll due to geographical isolation and port/airfield capability. The troop deployment was capped so as to limit increasing the burden on already strained host nation resources. The construct would have enabled the appropriate sequencing of equipment and personnel onto the island to assist the Government of Tuvalu particularly as the NZDF was providing the stability mechanism of support. The GoT staff had a solid foundation of practical knowledge for living and operating on the island, however, they lacked the technical and logistical support. It was within this context that the military component

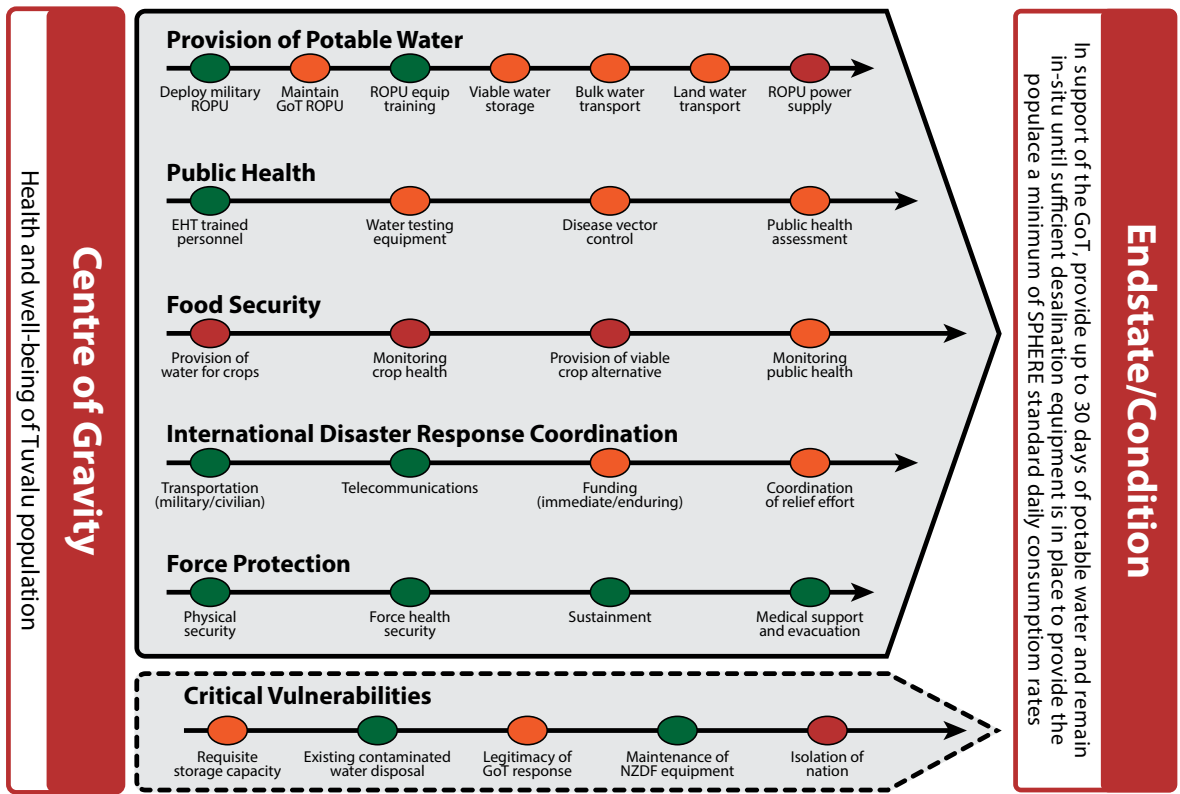


Figure 3: Centre of Gravity and the Lines of Effort Analysis of the Tuvalu Problem Set¹⁴

of national power, subordinated to the diplomatic arm (the mission was led by the NZ MFAT), was required to leverage personal relationships and interactions with the local population.

The operation in Tuvalu was successful; it cannot however be solely attributed to the response or planning. The NZDF deployed various air assets and task organised Military Engineer element,¹⁵ in concert with diplomats and the New Zealand Red Cross, which reinforced a small contingent of ADF personnel on the atoll. The international effort provided immediate relief, and set the conditions with GoT and NGO agencies to mitigate recurrence in the future. Ultimately, nature broke the drought with significant rainfall and the work of the coalition in conjunction with GoT to ensure potable water storage enabled sufficient rainwater capture to occur. Further, international donor efforts to provide for bulk water shipment to the island provided over two million liters of water to the stricken island.

Conclusion

This article is not intended to provide the panacea to resolve development of LOE in stability operations; rather it provides a possible way to determine them. Stability operations constitute a significant portion of Unified Land Operations doctrine, with a broad understanding that they are a central feature of all operations. The contemporary environment increasingly involves military forces across the globe concentrating significant effort towards humanitarian missions and disaster relief; this trend is likely to continue. Frequently, these missions tend to resemble ill-structured or evolving complex problems, where present planning processes provide some utility, but do not provide the flexibility to generate collaboration. The COG planning model in a HADR context provides a model to improve understanding of the operational environment and a mechanism to capture the efforts of other actors in the AOR. Further, it provides another template to enhance civilian and

military cooperation in a complex environment. Extant doctrine provides the necessary conceptual guidelines on how to think about the operations, however, there is little to guide the next generation of practitioners on how to think through these problems and figure out where to start when handed a blank sheet of paper.

This article was first published in the Small Wars Journal, but has been updated for this publication. The views expressed in this article are those of the author only and do not reflect the official policy or position of the New Zealand Defence Force, the New Zealand Government or its agencies.

Endnotes

- 1 Von Clausewitz, C. 1976. *On War*. Translated and edited by M. Howard and P. Paret. Princeton: Princeton University Press. 486.
- 2 Ibid., 486.
- 3 In March 2010 the US Army introduced Design into its doctrine. It is a critical and creative thinking methodology for ill-structured problems to enable commanders to understand, visualise and describe them, and to develop approaches to solve them.
- 4 “Decisive action is the continuous, simultaneous combinations of offensive, defensive, and stability or defense support of civil authorities tasks.” Excerpt From: *ADRP 3-0 Operations*.
- 5 Department of the Army. 2012. *ADRP 3-0 Unified Land Operations*. Washington, DC: Government Printing Office. 2–3.
- 6 “A comprehensive approach is an approach that integrates the cooperative efforts of the departments and agencies of the US Government, and to the extent possible, intergovernmental and nongovernmental organizations, multinational partners, and private sector entities to achieve unity of effort toward a shared goal. Successful operations involve actors participating at their own discretion or present in the operational area but not acting as a member of a multinational coalition. Integration and collaboration often elude the diverse array of actors involved, and may vary significantly given the degree of overlap between each actor’s priorities and goals. A comprehensive approach achieves unity of effort through extensive cooperation and coordination to forge a shared understanding of a common goal. A comprehensive approach is difficult to sustain but still critical to achieving success in an operation with a wide representation.” Excerpt From: U.S. Army. *ADRP 3-07 Stability*.
- 7 Department of the Army. 2012. *ADRP 3-07 Stability*. Washington, DC: Government Printing Office. 1–5.
- 8 Department of Defense. 2011. JP 5-0 *Joint Operational Planning*. Washington, DC: Government Printing Office. III–29.
- 9 Central Intelligence Agency (CIA) n.d. “Australia-Oceania: Tuvalu” <https://www.cia.gov/library/publications/the-world-factbook/geos/tv.html>
- 10 TuvaluIslands.com. 2012. “Funafuti”. Accessed November 1. <http://www.tuvalu.islands.com/islands/funafuti.html>
- 11 TuvaluIslands.com. 2012. “Funafuti”. Accessed November 1. <http://www.tuvalu.islands.com/islands/funafuti.html>
- 12 Pickup, O. 2011. “Tiny Pacific Island of Tuvalu calls state of Emergency with just two days of drinking water left”. *Daily Mail*, October 4. <http://www.dailymail.co.uk/news/article-2044717/Pacific-Island-Tuvalu-calls-state-emergency-water-shortage.html>
- 13 SPHERE standards for water are 15 liters, per person, per day as a minimum. The SPHERE Project – Humanitarian Charter and Minimum Standards in Humanitarian Response 2011, 68. <http://www.sphereproject.org/> Accessed 01 November 12.
- 14 ROPU Reverse Osmosis Purification Unit.
- 15 The Military Engineer element was led by elements of a Task Unit Headquarters with the contingent based around:
 - » a combat engineer general support capability brick to provide reverse osmosis capability,
 - » a multifunctional construction engineer capability brick,
 - » a medical detachment (own force health and environmental health), and
 - » a small CSS each.

Key Questions List for Further Research

1. The Future Land Operating Environment:

- a. How will big data, machine autonomy, artificial intelligence and human enhancement change military operations?
- b. How will urbanisation and climate change impact on the New Zealand Joint Task Force's operating model?
- c. How dispersed is 'too dispersed' for future land force operations – what constraints and considerations will arise in distributed operations?
- d. What are the ethical and legal considerations of employing remote and autonomous systems in military operations?
- e. What has FLOC 35 not identified or incorrectly assessed in terms of the future land operating environment?

2. The Future Land Operating Context:

- a. How can we best integrate Acceptable Enduring Conditions into military decision making, TTPs and thought processes?
- b. If warfare has evolved from melee to mass and then to manoeuvre, is there another evolution coming and, if so, when and what will it be?
- c. How does the concept of legitimacy apply to NZDF operations?

3. Integrated Land Missions

- a. What are the implications of conducting Information Activity?
- b. What does Capacity Building mean for force generation?

4. Future Land Capabilities

- a. How can future deployed HQs best leverage reach-back?
- b. Are there novel or innovative ways to harden and secure our networks?
- c. What organisational structures does the future land force need to conduct CEMA as part of Integrated Land Missions?
- d. Does the CIMIC function best align with the Engineers, rather than the Artillery?
- e. What can the land force adapt from psychology and physiology studies, to benefit decision making and leadership?
- f. How can wargaming and red-teaming be employed to best effect?
- g. What does changing demographics mean for future force generation?
- h. How can the land force benefit from diversity in the workforce?

