

Canadian
Forces
College

Collège
des
Forces
Canadiennes



THE MULTI-DOMAIN BATTLE: IMPLICATIONS FOR THE CANADIAN ARMY

Maj Kristian Udesen

JCSP 44

Master of Defence Studies

Disclaimer

Opinions expressed remain those of the author and do not represent Department of National Defence or Canadian Forces policy. This paper may not be used without written permission.

© Her Majesty the Queen in Right of Canada, as represented by the Minister of National Defence, 2018.

PCEMI 44

**Maîtrise en études de la
défense**

Avertissement

Les opinions exprimées n'engagent que leurs auteurs et ne reflètent aucunement des politiques du Ministère de la Défense nationale ou des Forces canadiennes. Ce papier ne peut être reproduit sans autorisation écrite.

© Sa Majesté la Reine du Chef du Canada, représentée par le ministre de la Défense nationale, 2018.

CANADIAN FORCES COLLEGE – COLLÈGE DES FORCES CANADIENNES
JCSP 44 – PCEMI 44
2017 – 2018

MASTER OF DEFENCE STUDIES – MAÎTRISE EN ÉTUDES DE LA DÉFENSE

**THE MULTI-DOMAIN BATTLE:
IMPLICATIONS FOR THE CANADIAN ARMY**

Maj Kristian Udesen

“This paper was written by a student attending the Canadian Forces College in fulfilment of one of the requirements of the Course of Studies. The paper is a scholastic document, and thus contains facts and opinions, which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence. This paper may not be released, quoted or copied, except with the express permission of the Canadian Department of National Defence.”

Word Count: 14,444

“La présente étude a été rédigée par un stagiaire du Collège des Forces canadiennes pour satisfaire à l'une des exigences du cours. L'étude est un document qui se rapporte au cours et contient donc des faits et des opinions que seul l'auteur considère appropriés et convenables au sujet. Elle ne reflète pas nécessairement la politique ou l'opinion d'un organisme quelconque, y compris le gouvernement du Canada et le ministère de la Défense nationale du Canada. Il est défendu de diffuser, de citer ou de reproduire cette étude sans la permission expresse du ministère de la Défense nationale.”

Compte de mots: 14,444

TABLE OF CONTENTS

Table of Contents	ii
Abstract	iii
Chapter	
1. Introduction	1
2. Current Paradigm	4
Current Operational Doctrine – Air-Land Battle	
Anti-Access, Area Denial and Hybrid War	
Current Responses to Anti Access, Area Denial and Hybrid War	
3. Emerging Multi-Domain Battle	17
Multi-Domain Battle Overview	
Changes to Battlespace Conceptualization	
Components of the Solution	
Multi-Domain Battle Implications to Non-Land Domains	
4. Applicability of American Doctrine To Canada	28
American Classification of Operational Level	
Canadian Classification of Operational Level	
Adapted Dispersed Operations: Tactical or Operational Doctrine?	
Air-Land Battle Assumptions in Canadian Army Doctrine	
5. Multi-Domain Battle and the Canadian Army	41
SWOT Analytical Tool	
SWOT Analysis: Strengths	
SWOT Analysis: Weaknesses	
SWOT Analysis: Opportunities	
SWOT Analysis: Threats	
6. Conclusion	57
Bibliography	60

ABSTRACT

The United States of America has demonstrated conventional military superiority for the last two decades as result of its military's reorganization and adoption of Air-Land Battle doctrine after the Vietnam War; however, its overmatch in the battlespace is now beginning to erode. Rising and resurgent state actors, such as China and Russia, have developed styles of warfare that counter the dominance of American led coalitions. Accordingly, the United States Army and Marine Corps are now developing a new operational doctrine, the Multi-Domain Battle, in an attempt to unify all domains of warfare and conflicts. This nascent doctrine has the potential to be a significant change from the previous Air-Land Battle paradigm. Canada maintains a differing view of the operational level than the United States. Canadian operational doctrine ensures that force contributions achieve national goals, but it operates at a tactical level within a warfighting context. The Canadian Army mostly achieves its government's political goals by ensuring that it provides meaningful force contribution to coalitions, most of which are led by the United States. It is therefore imperative that the Canadian Army's force employment concept, Adaptive Dispersed Operations, is nested within American operational level doctrine. As the American doctrine evolves from being based on Air-Land Battle to Multi-Domain Battle concepts, the Canadian Army must re-evaluate its own doctrine, training, organization and employment. Using a SWOT Analysis, the paper presents an overview of where the Canadian Army is set to thrive in the new battlespace and where it needs to adapt. The Canadian Army must update and rationalize its doctrine and organization to ensure that it is a relevant coalition partner into the future.

1. INTRODUCTION

The United States of America has demonstrated uncontested conventional military superiority for well over two decades. Much of this success is as result of their military's reorganization after the Vietnam War, in particular the emergence of the Air-Land Battle doctrine.¹ The military overmatch that the United States' Joint Force coalitions have enjoyed over the battlespace is now beginning to erode, however.² Rising and resurgent state actors are beginning to develop counters to Air-Land Battle based doctrine and contest American military dominance.³ Out of this new problem set, the United States Army and Marine Corps is developing new land doctrine, but one that out necessity incorporates all domains within it.

Canada, conversely, is a nation that greatly benefits from the global rules-based order and contributes military of forces to help maintain the status quo.⁴ The Canadian Army has only in a very few cases approached the classic definition of commanding at an operational level.⁵ The research question of this paper is whether the Multi-Domain Battle operational level doctrine would impact the Canadian Army? If so, how would it? And how prepared is the Canadian Army for that shift?

The answer submitted is that the American adoption of the Multi-Domain Battle will impact how Canada's Army is developed, generated and employed. Looking to

¹ Douglas W. Skinner, "Airland Battle Doctrine," *Centre for Naval Analyses*, Professional Paper 463 (September 1988): 3.

² TRADOC, *White Paper: Multi-Domain Battle: Combined Arms for the 21st Century*. (n.p. 24 February 2017), 1.

³ *Ibid.* 1-3.

⁴ Chrystia Freeland, speech, "Canada's Foreign Policy Priorities," Global Affairs Canada (Ottawa, Canada, 6 June 2017).

⁵ William McAndrew, "Operational Art and the Canadian Army's Way of War," in *The Operational Art: Developments in the Theories of War*, ed. B.J.C. McKercher and Michael A. Hennessy (Westport, Connecticut: Praeger Publishers, 1996), 87.

future conflicts, the Canadian Army has several qualities that could make it flourish within coalitions fighting a Multi-Domain Battle, but it first must address potential liabilities its structure and its current force employment concept: Adaptive Dispersed Operations.

The methodology for this paper will be a hybrid of surveying pertinent doctrine and articles to establish context, followed by a SWOT (Strengths, Weaknesses, Opportunities and Threats) Analysis to assess the Multi-Domain Battle's implications on the Canadian Army. Although the paper speaks to the Multi-Domain Battle's effects on other domains, the scope is limited mostly to the implications for the land force. The SWOT Analysis gives a broad identification of possible opportunities and frictions associated with Canada contributing to United States led coalitions informed by the Multi-Domain Battle, but it stops short of offering concrete tactical solutions to issues. Therefor areas for further research include a broadening of scope of analysis of Multi-Domain Battle's effects on the Royal Canadian Navy, Royal Canadian Air Force, Canadian Joint Operations Command and Canadian Special Forces Command. In addition, research on the Multi-Domain Battle and the Canadian Army can be deepened to determine optimal organizational and employment solutions for its units and formations. A final note is that the Multi-Domain Battle is still nascent and under-development, with American trials and evaluations currently being executed.⁶ Emerging American developments in this area should be closely followed and analyzed by the Canada Armed Forces to ensure that maintain close interoperability with its key ally.

⁶ Robert B. Brown and David G. Perkins, "Multi-Domain Battle: Tonight, Tomorrow, and the Future Fight," *War on the Rocks*, 18 August 2017, <https://warontherocks.com/2017/08/multi-domain-battle-tonight-tomorrow-and-the-future-fight/>.

Supporting evidence for this paper's thesis will be divided into four chapters: the current paradigm and its challengers, the emerging Multi-Domain Battle, the applicability of American operational doctrine to the Canada, and the Multi-Domain Battle's effects on the Canadian Army: a SWOT Analysis.

The first chapter will provide background on the American Army's current paradigm, which is influenced greatly by Air-Land Battle. Discussed first will be the influences and establishment of the Air-Land Battle as the dominant operational level doctrine for the United States Army. Subsequently, the paper will discuss where the application of the Air-Land Battle has found difficulty in translating into strategic success. The paper will briefly explore the main counters that revisionist states are using to limit this doctrine's conventional force effectiveness, mainly Anti-Access Area Denial and Hybrid Warfare. Finally, it will survey two current doctrinal adaptations the Americans have enacted to date by way of response, Air-Sea Battle and the Comprehensive Approach.

The next chapter will provide a summation of the emerging Multi-Domain Battle. Starting with why the Americans feel it is required and defining how it views the new paradigm of war. Also covered will be the implications of the domains of air, maritime, cyberspace, information and space to the land domain.

The subsequent chapter will establish the link and importance of American operational level doctrine to that of the Canadian Army. This chapter will demonstrate that although Canada does not share the same definition of operational, American operational doctrine is an important influence on Canadian doctrine and how it integrates into coalitions. These influences include important assumptions Canada has made due to

Air-Land Doctrine when determining how its army contributes and fights within coalitions. Specifically, the tacit assumptions that govern the Canadian Army's force employment concept of Adaptive Dispersed Operations.⁷

The final chapter is a SWOT Analysis of Canadian Army based off of the force "components of the solution" found in the Multi-Domain Battle.⁸ It will cover a few focused observations on the challenges and advantages that the Canadian Army possesses in looking to transition to a new future operating environment informed by the Multi-Domain Battle.

2. CURRENT PARADIGM

Current Operational Doctrine – Air-Land Battle

Lessons from the United States victory in World War II had ingrained an ability of its military to project massed forces across the globe. The United States had mastered wars of attrition through its superior weight of fires and logistics, which it maintained well into the Cold War.⁹ The American 'Way of War' at the time led informed and shaped the doctrine and organization of all of its allies in the Western Nations. This weight of fires and logistics became the Western Nations' key to defeating any state actor in war, specifically any total war of attrition.¹⁰

During the Cold War, the nature of a war of attrition also changed from massing armies to nuclear weapons. The idea of strategic deterrence became an all-encompassing

⁷ Department of National Defence, B-G1-310-001/AG-001, *Land Operations 2021: The Force Employment Concept for Canada's Army of Tomorrow* (Kingston: Army Publishing, 2007).

⁸ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 23-28.

⁹ Aaron P. Jackson, *The Roots of Military Doctrine: Change and Continuity in Understanding the Practice of Warfare* (Fort Leavenworth, Kansas: Combat Studies Institute Press, 2013), 17-18.

¹⁰ *Ibid.*

concern, and seemed to preclude the notion of a conflict limited in means between state actors. In official American Military thought, there existed only the strategic and tactical levels.¹¹

The Vietnam War saw an American military that was able to achieve military tactical superiority while being unable to secure a strategic victory. The war was limited in its means in order to ensure that a proxy war did not escalate into a full-scale global nuclear conflict between states.¹² Although airstrikes did enter into North Vietnam, the land forces were geographically limited to South Vietnam and focused on the strategies of Attrition and Pacification.¹³ Despite the incredible amount of material and soldiers that the United States and its allies were able to force project into Vietnam, the United States was unable to reach its political goals leading to a loss of confidence with the American population, eventual strategic defeat, and withdrawal of American soldiers.

The Vietnam War demonstrated that the deterrent of nuclear annihilation or the power of modern weapons systems did not necessarily translate into a moratorium on limited, though still costly, conventional warfare.¹⁴ The strategic nuclear triad was insufficient to guarantee the protection of military aims worldwide. In addition, superiority of weapons and firepower alone were equally insufficient in resolving a conflict, especially in the face of many of their opponents, such as the North Vietnamese, practising a Total War philosophy.

¹¹ Clayton R. Newell, "On Operational Art," *On Operational Art*, ed. Clayton R. Newell and Michael D. Krause (Washington: U.S. Government Printing Office, 1994), 11.

¹² James S. Robbins, *This Time We Win: Revisiting The Tet Offensive*, (New York: Encounter Books, 2012), 23.

¹³ James H. Willbanks, *The Tet Offensive: A Concise History*, (New York: Columbia University Press, 2007), 165, 181.

¹⁴ Ward Wilson, "The Myth of Nuclear Deterrence," *Nonproliferation Review*, vol. 15, no. 3 (November 2008), 434.

The Vietnam defeat led to a reassessment of how the United States military fought its wars.¹⁵ There was a perception that while the United States had been focused on a counterinsurgency, its state adversaries, primarily the Soviet Union, had “used America’s distraction to pull ahead in weapons quality as well as in numbers.”¹⁶ In addition, new weapons had been developed in that generation that seemed to promise a change in the manner in which conflicts were fought and an increase in the lethality of the battlefield.¹⁷ This sparked a need to update the military, which for the army, began a lengthy development process that culminated under General Starry, the commander to America’s Army Training and Doctrine Command (TRADOC).¹⁸ The resulting doctrinal shift would be known as the Air-Land Battle.

Air-Land Battle incorporated the several elements of British, German and Soviet thought into the American way of war. A central idea was that an operational level existed that linked tactical actions to strategic goals. Beyond the introduction of ‘operational art’, the Air-Land Battle integrated the concepts of battlefield framework, decentralized execution and the integrated battle into the style of warfare.¹⁹ Now in doctrine the battlefield was separated into rear, close and deep areas, where effects were synchronized in each to bring about a decision against and enemy. Also decentralized execution was introduced to increase speed of action, this concept would be the forerunner to mission command. Finally, air and land forces would synchronize fires and

¹⁵ Douglas W. Skinner, “Airland Battle Doctrine,” *Centre for Naval Analyses*, Professional Paper 463 (September 1988): 3.

¹⁶ Richard M. Swain, “Filling the Void: The Operational Art and the U.S. Army,” *The Operational Art: Developments in the Theories of War*, ed. B.J.C. McKercher and Michael A. Hennessy (Westport, Connecticut: Praeger Publishing, 1996), 149.

¹⁷ *Ibid.*

¹⁸ *Ibid.*

¹⁹ Perkins, David G. “Multi-Domain Battle: Driving Change to Win in the Future,” *Military Review* (July-August 2017), 8.

manoeuvre, capitalizing on the preponderance and dominance of American airpower to shape land operations. These ideas mostly stemmed from the military theorist grouped under a manoeuvrist approach, focused not on attrition of enemy forces but on the enemy's will to fight outmanoeuvring and dislocation.²⁰ The ideas were integrated, but there was still a compromise from the purist academic model in that attrition and firepower maintained an important role in American fighting.²¹

The simplified overview of Air-Land Battle is one where joint forces attacking an enemy in depth while concurrently assaulting decisive points in order to break its will to fight. In order to facilitate these actions, the battle field is divided into deep, near and rear operations.²² The crux of Air-Land is the ability to build up force in a relatively safe location prior to employing the massed forces and fires throughout the enemy's depth.²³ Once this build-up was completed, the Air-Land Battle employed firepower not only as a method by which to attrite enemy forces, but a way in which to permit manoeuvre of friendly forces in order to dislocate the enemy.²⁴

The doctrine's focus on manoeuvre also lessened the reliance on sheer weight of numbers to be victorious in a campaign, allowing for synchronized fires and forces to permit a smaller force to win. This was especially attractive for American and NATO

²⁰ Jeffrey W. Long, "The Evolution of U.S. Army Doctrine: From Active Defence to Airland Battle and Beyond," (master's thesis, U.S. Army Command and General Staff College. 1991), 49-52.

²¹ Saul Bronfeld, "Did TRADOC Outmanoeuvre the Manoeuvrists? A Comment," *War & Society*, Vol. 27 No. 2 (October 2008), 125.

²² General David Perkins, "Multi-Domain Battle: Driving change to win in the future," *TRADOC News Center*, 06 July 2017, <http://tradocnews.org/multi-domain-battle-driving-change-to-win-in-the-future/>

²³ Jeffrey W. Long, "The Evolution of U.S. Army Doctrine: From Active Defence to Airland Battle and Beyond," (master's thesis, U.S. Army Command and General Staff College. 1991), 60-63.

²⁴ Douglas W. Skinner, "Airland Battle Doctrine," *Centre for Naval Analyses*, Professional Paper 463 (September 1988): 26.

planners in Europe attempting to determine how their smaller conventional forces would combat the much larger and more concentrated Soviet forces.²⁵

In practice, the Air-Land Battle was devastating against contemporary conventional forces. The concepts were first attempted in Operation *Desert Storm*, where American forces overwhelmingly defeated Iraqi forces who had invaded Kuwait. While it did not employ all aspects of the Air-Land Battle, Operation *Desert Storm* did include many of the initial principles. It was not simultaneous in the application of joint forces, instead relying on a sequential air and then ground campaign. In addition, technology was not fully implemented with 90% of bombs dropped not being precision. Regardless, the shock action through fire and movement that was achieved helped shake off the spectre of Vietnam.

Importantly, though, Operation *Desert Storm* was precluded by a massive five month troop build-up in Saudi Arabia, Operation *Desert Shield*. The key point in the operational level of combat was the logistical victory of transporting over 900,000 coalition soldiers to Saudi Arabia in order to prepare for the combat mission to follow. Saudi Arabia was an uncontested rear area from which to mass and resupply forces by air and sea. Without this staging area, it would have been a very different challenge to mass and synchronize the forces required to have caused the Iraqi Military to collapse after just 100 days of operations.

In the intervening years, doctrine names shifted somewhat, especially as non-kinetic effects were viewed as increasingly important; however, no doctrine that the American military developed massively redesigned the concepts laid out by Air-Land Battle. The doctrine was adjusted to be called “Full Spectrum Operations in 2001, but

²⁵ *Ibid.*

was in essence the Air-Land Battle with emphasis added onto “Operations Other Than War,” now renamed stabilization. These changes reflected the counter-insurgency and stabilization missions that the United States and Western allies had faced in the Balkans and Afghanistan, but were a modification rather than a whole-sale change of the original concepts.

In its new format, the Air-Land Battle would truly be incorporated into the United States subsequent war with Iraq in 2003. In Operation *Iraqi Freedom*, all aspects of Air-Land occurred, with simultaneity, precision weapons, mission command and high tempo of manoeuvre. The outcome was the Iraqi army soundly beaten in less than a month by a total American-led coalition force a fraction of its size. The coalition had synchronized its air, naval and land forces to project total military dominance over a large country that had been using Soviet Era defence equipment. American conventional military dominance was uncontested and astonishing, so astonishing that the defeat of the Iraqi Army occurred well ahead of even what the American Forces had predicted.

Yet there were echoes, though not a direct parallel, to the Vietnam War. The United States-led coalition had achieved overwhelming conventional military force overmatch, defeating the Iraqi military while taking only 155 casualties, but had failed to achieve the strategic aims for the conflict.²⁶ Much of the blame for resulting insurgence and eventual rise of Daesh was placed on the American, specifically the American military’s, inability to fully develop a strategy beyond the conflict stage. The manoeuvrist approach and operational art of American doctrine had brought about a total military victory without ensuring a strategic political victory. Meanwhile as the American

²⁶ John Keegan, *The Iraq War* (Toronto : Vintage Canada, 2005), 204

coalitions were embroiled in fighting counterinsurgencies in Iraq and Afghanistan, revisionist powers were seeking counters to the Western military overmatch.

Anti-Access, Area Denial and Hybrid War

Over the last several decades both China and Russia were observing military developments. While the United States and its allies were heavily engaged in counterinsurgency operations, a rising China and resurgent Russia were each independently attempting to develop counters to the Air-Land Battle dominance. Both of these countries undertook a massive modernization of their forces and sought to use emerging technology to off-set the established conventional power of the United States.

The counters that states developed to the Air-Land Battle were classified by Americans into two forms, Anti-Access Area Denial (A2AD) and Hybrid War. China and Russia's execution of these two forms of counter differ in detail due to their respective region's geographic and demographic make-up, but they hold to the same themes.

A2AD uses two main threats to attempt to prevent "... [the adversary's] ground forces from ever engaging with US forces in maneuver engagements."²⁷ Anti-Access focuses on preventing American forces from achieving lodgement in a theatre of war.²⁸ Non-military means to achieve this can include information operations targeting national support for a projection of force, diplomatic pressure against a host nation. The military means could include "attacks against US bases, attacks against shipping and troop transport, denial of

²⁷ Ben Jackman, "Understanding the Anti-Access and Area Denial Threat: An Army Perspective," (master's thesis, United States Army Command and General Staff College: Fort Leavenworth, Kansas 2015) 7.

²⁸ *Ibid* 9

specific avenues of approach and lines of communication, or attacks against electronic infrastructure and networks.²⁹

This is nothing new to war, the North Vietnamese successfully targeted American national will during the Vietnam War in general and in the Tet Offensive in particular, if not initially in the offensive then at least in the follow-up and exploitation of the outcomes. What has changed is that certain technological developments have made it such that effective Anti-Access campaigns are easier to resource and execute.

Several technological developments are now more affordable and accessible to competitor nations, including “long-range precision strike systems, littoral anti-ship capabilities and high quality air defenses.”³⁰ These technologies, along with an appropriate doctrine which allows their employment, posits stopping an enemy’s forces from being able to enter into theatre, or at least making theatre entry so costly so as to preclude it from being a viable political option to the United States.

The Area Denial segment of A2AD is focused on ensuring that an enemy cannot build up sufficient forces in theatre to conduct offensive operations. This may seem like semantics, and the lines between Anti-Access and Area Denial are blurred, but it does offer a difference in potential weapons used as well as the primary military domain being used.

An Anti-Access problem would be more firmly in the realm of an air force or navy in the transport of soldiers into the theater, whereas the enlargement of a lodgement becomes a truly joint problem within the context of an Area Denial threat. Many of the

²⁹ *Ibid* 9

³⁰ *Ibid* 10

same weapons systems are used in both styles of threats, though longer range weapons are required for Anti-Access.

China and Russia feature variations on their specifics with respect to A2AD, but both are similar enough in principle to be called the same thing. The main objective of A2AD is to deny a safe staging area for a Western force. By blocking forces from entering a theatre with the use of ballistic and cruise missiles, robust anti-air, massed indirect fire, electronic attack, and cyber-attack, A2AD seeks to ensure that entry operations are too costly for a Western force to pursue. Effectively, A2AD would in theory deny the theatre of war from the West and the staging of an Air-Land Battle styled force. Stripped of the air dominance and unhindered data transmission upon which much of the modern way of combat requires, the Western forces technological advantages would be neutralized.

China's variation of the A2AD focuses on claiming and restricting American military access to the South China Sea. Its ultimate goal is to claim these international waters as domestic ones. In order to accomplish this, it has created man-made islands and a host of land-based missile systems. In addition to its investments in its Navy's surface and sub-surface fleet, it has spent considerable resources developing cruise and ballistic missiles. China does not currently have the same restrictions that Russia and the United States have on medium range (500 – 1500 km) ballistic missile launchers, and has developed a suite of them in order to be used as integral A2AD weapons. The island creation, long/mid-range missiles and subsurface fleet focus on ensuring that American carrier groups will not be allowed freedom of movement in the South China Sea. Without that ability to project power, it would become difficult for the American military to gain

the foothold necessary to build-up forces. This effectively ends the chances for a low casualty, overmatched scenario experienced by Western coalitions since the 1990's. Any future conflict would become a costly island hopping battle of attrition as was experienced during the Pacific War from 1941 – 1945.

Russia's A2AD strategy has the same goal of denying a region, but in this case the region is the land-based Eastern Europe as opposed to the predominantly water based South China Sea. Russia maintains integrated air defence systems heavily positioned on their Western borders and in their enclave of Kaliningrad, which provides coverage over the Baltics states, Baltic Sea and Northern Poland.³¹ In addition, it maintains both ground-based indirect fires that can cover much of Europe and cyber offensive capabilities that can be used to target force and government infrastructure.³² These systems would seek to majorly disrupt theatre deployment of forces, while also denying NATO air superiority. Taken together, the Russian military would dominate its perceived natural sphere of influence.

The Russian military has also invested in long range artillery and thermobaric weapons, linked-in with intelligence, surveillance and reconnaissance systems such as drones. Unlike Western militaries, their ground forces are “typically heavily defended with air defense systems rather than by air support” and so “in a situation of mutual air denial, Russian ground units would most likely enjoy a substantial advantage derived from their numerical superiority in ground-based fire support.”³³

³¹ Scott Boston and Dara Massicot, “The Russian Way of Warfare: A Primer,” *Perspective*, (Rand Corporation:2017), www.rand.org/t/PE231.

³² *Ibid.*

³³ *Ibid.* 7-8

The conventional threat has also morphed in both Russia and China. Overtly in Russia's case, as the annexation of Crimea and the troubles in Eastern Ukraine have underscore, Russia is using a mix of conventional and unconventional, non-attributable forces in conflict. In the case of Russia, Western commentators have called the blending of military and non-military means to achieve physical and psychological effects in the battlespace the Hybrid War.³⁴ This Hybrid war is not necessarily something completely new, but it is a style of conflict well practised by a government that can easily align all the efforts of the state towards war.

The Russian annexation of Crimea was successful due to the presence of multiple factors, including amongst others a largely pro-Russian civilian element and the ease of infiltration of special operations forces from already established Russian bases.³⁵ The hallmark of Crimea were the non-attributable forces or "Little Green Men" who moved into the country to secure key positions while Russia ensured that a large conventional force maintained on stand-by at the border. The annexation was consolidated by the confusion wrought by the information war and non-attributable forces, support of local population, and with the threat of conventional forces to defend gains. The rapidity at which this occurred coupled with the casualties which would have to be incurred by Western conventional forces to reverse the gains, made the annexation a fait-accompli for Russia.

China has not yet shown the full extent to which it can use the same style of tactics, though it is a one party state that prescribes historically to warfare being waged by all parts of its population, i.e. Mao's concept of the People's War. The main difference

³⁴ Bettina Renz and Hanna Smith, "Russia and Hybrid Warfare: Going Beyond the Label" *Aleksanteri Papers*, (Finland : Kikimora Publications, 2016), 3.

³⁵ Bettina, 6

between the Chinese and Russian approaches is, again, the theatre of operations is the South China Sea and therefore more maritime focused. While Russia seeks to leverage Russian minority populations in bordering countries, China has been constructing bases in isolated areas to slowly establish claim and control over what it sees as its sphere of influence. Ostensibly these islands have been explained as bases for China's fishing vessels, however, none have been used for that purpose. The Chinese fishing vessels are used as a vanguard for Chinese claims, with fishing boats arriving in waters up to 900 nautical miles away from Chinese holding, then followed by the Chinese coast guard to protect them and finally reclaimed islands with military forces as additional control and security methods for them.³⁶ This strategy has been likened to the Chinese's "Little Blue Men" use of Hybrid War in their region.³⁷

Current Responses to Anti Access, Area Denial and Hybrid War

The United States Air Force and Navy did attempt to respond to the A2AD threat by creating the Air-Sea Battle Doctrine. As its name suggests, it sought to combine air and sea to defeat an A2AD approach. As previously stated, though, while the Anti-Access component of A2AD could be viewed as primarily an air and sea problem, the Area Denial component belonged to all domains. The main weakness of the Air-Sea Battle was that it did not include any consideration of a land component. The doctrine thus stated several good ideas, but could not guarantee that its successful application would eradicate all of an adversary's ability to contest the ingress of military force into a

³⁶ Simon Denyer, "How China's fishermen are fighting a covert war in the South China Sea," *The Washington Post*, 12 April 2016. https://www.washingtonpost.com/world/asia_pacific/fishing-fleet-puts-china-on-collision-course-with-neighbors-in-south-china-sea/2016/04/12/8a6a9e3c-fff3-11e5-8bb1-f124a43f84dc_story.html?noredirect=on&utm_term=.8c605761da13

³⁷ See Class readings on AJWS irregular war.

theatre. Also, Air-Sea Doctrine focused mainly on the military hardware required to breach into a theatre of operations, and not on the shaping operations which could be used prior to and immediately following conflict arising. While the Air Force and Navy contemplated A2AD, the United States land forces attempted to integrate their lessons learned from counterinsurgency and stabilization to ensure that operations post-military victory would be able to ensure a lasting strategic victory.

The Comprehensive Approach first began gaining traction with the 2003 *Stability Operations* doctrinal publication. The approach sought to inculcate a whole-of-government approach to stabilizing a region, to include working with other government departments and non-government organizations. It codified many of the practices that had been occurring under the Vietnam War's Pacification strategy, seeking to create credibility in the host-nation's government and train host nation security forces. In addition, it realized that the solutions required to bring stability to a country may not be military ones.

The approach was complementary to the Air-Land Battle's in that it sought to ensure that once combat operations had ceased that there existed viable doctrine by which the military could operate to stabilize the country. Elements of the Comprehensive Approach were adopted by many American allies fighting alongside in Iraq and Afghanistan.

Missing from these approaches was one doctrine that comprehensively sought to combine all domains and better incorporate full scale conventional war with stabilization and deterrence actions prior to and afterwards. The Multi-Domain Battle doctrine is just such an attempt.

3. EMERGING MULTI-DOMAIN BATTLE

Multi-Domain Battle Overview

Multi-Domain Battle seeks to combine all operations and domains under one doctrine. Its objectives are to compete short of war, turn denied spaces into contested spaces, defeat an enemy's campaign and to consolidate gains after a conflict. Instead of seeking to clearly delineate war from peace, regular from irregular war and state from non-state actors, it instead views it all on a continuum. This interrelatedness of actors and conflict intensity also applies to physical and psychological effects and the military environments, or domains. The Multi-Domain Battle is titled as such because it sees each domain being able to support and affect the others. The concept goes with that of convergence, where an enemy is presented with multiple attacks that may be of very different character thereby creating an overwhelming dilemma. A basic example would be an enemy naval task force having to combat not only a coalition naval task force, but also long range ground based missiles fired from littoral areas, and cyber and electronic attacks on their shipboard systems. By converging capabilities across the domains, the doctrine creates windows of opportunity for a friendly force to exploit. This difference style of warfare is evolving as the operational environment is becoming immunized against the previous joint concepts. In the words of the current head of the American Army, General David Perkins, the threats have changed and the American land forces must "understand the changes as they occur and anticipate how they will affect

operations. Doctrine must evolve before the Army faces potential enemies, not after.”³⁸

Changes in the Operational Environment

Now that it is lessening its commitments to fighting insurgencies, the United States is yet again identifying state aggression in its security agendas. Its counterinsurgency experience left it beginning to trail in its high end combat capabilities. Therefore there is the belief that U.S. ground combat forces, operating as part of “... joint, interorganizational, and multinational teams, are currently not sufficiently trained, organized, equipped, or postured to deter or defeat capable peer enemies to win in future war.”³⁹ Multi-Domain Battle was borne out of the desire to be prepared for a worst case scenario of a war against a peer enemy using all conventional and non-conventional means, as well as being able to compete with a peer adversary in operations short of war.

The Multi-Domain Battle Doctrine is an attempt to provide a winning strategy for a military force to win in a world that features a resurgent state actor/hybrid threat, while maintaining non-state adversaries. It posits that the operational environment has changed in four important ways: that all domains will be contested, that the battlespace will feature increased lethality, that the battlespace environment is becoming more complex, and that traditional military deterrence is being challenged.⁴⁰ These four major changes threaten to separate and defeat current joint operational doctrine and the claims should be individually addressed.

³⁸ General David Perkins, “Multi-Domain Battle: Driving change to win in the future,” *TRADOC News Center*, 06 July 2017, <http://tradocnews.org/multi-domain-battle-driving-change-to-win-in-the-future/>

³⁹ MDB White Paper

⁴⁰

Previously, Air-Land Battle Doctrine presupposed that the coalition had supremacy in all domains save land.⁴¹ As land was the only contested domain, air, maritime and space all supported land operations. These operations were conducted without the serious threat of losing communications due to electronic spectrum or cyberattack. The Multi-Domain Battle Doctrine foresees that adversaries will close the technological gap with the United States and be able to contest all domains of warfare, and do so with far more effect than previously.

The increased lethality that the Multi-Domain Battle speaks to is mainly the production of high tech air defence, ballistic and cruise missiles.⁴² The adversary's capabilities now allow it to use precision strike to target large staging areas of Western coalitions and ensure that the coalition's air power can no longer be used unimpeded.⁴³

Complex environment refers to the increasing expectation of having to fight in urban, littoral terrain, with local forces while dealing with informational warfare and WMD threats. The classic manoeuvre battle on open ground will still exist, but may not be the main terrain over which is contested. Informational warfare will cause local actions in one theatre to increasingly have effects across all theatres of war.⁴⁴

Lastly, anti-access, area denial alongside operations just below the threshold of war (cyber or use of non-attributable forces) will greatly challenge the current capacity of the West to deter against state aggression. These threats to deterrence will exploit the rule of law by achieving the adversary's ends in more covert ways, and once consolidated by

41

42

43

44

conventional forces, will make it prohibitively costly for the West to intervene.⁴⁵ An example of this is Russia's annexation of Crimea.

Changes to Battlespace Conceptualization

The Multi-Domain Battle also contends that the battlespace has been altered by technologies and the manner in which adversaries now fight. How the battlespace is visualized has subsequently changed from the rear, close and deep areas to a much more complex and interrelated idea. The operational framework has been changed due to the three major changes that have altered the battlespace making it expanded, converged and compressed.⁴⁶

The expanded nature of the battlespace is one where geographically located theatres are now interrelated. Adversaries now have the means to attack military forces not only in the theatre of operations, but in North America and in staging areas. This concept would not be new to many Europeans who never really had a safe haven during state-on-state conflict, but it is a change for the Americans (as well as Canadians) that fortress America is not an impregnable as it once was.⁴⁷ This is especially the case with non-physical weapons, such as cyber, space, electronic warfare and informational attacks.

These new non-physical domains have been fully taken advantage of in the new style of warfare. Informational war has always been a part of the Russian way of war, but new mediums make it increasingly effective.⁴⁸ In addition, these new domains allow increasingly for attacks to be freed from time constraints, whereas distance and isolation

45

46

47

48

from most of the world's troubled regions in the past gave time for reaction, the instantaneous nature of electronic, space, cyber and informational reduce that advantage.

Lastly the battlespace has been expanded in terms of the actors employed. Again, this may not be a revolutionary to warfare as there are many examples of state and non-state actors partnering in the past, proxies and agitators have often been used by states. The scale and integrated nature of non-state actors within current adversaries' campaign plans has become problematic.⁴⁹ The admission of the expanded nature of actors says more about the American military's acknowledgement that there is no clear delineation between non-state and state.⁵⁰

This folds into the second concept of a changing battlespace, that it has become converged. The converged nature of conflict is not only an effect that the United States wishes to accomplish, it is a scenario which they are increasingly noting that competing states are using. Convergence in this sense means being able to "integrate capabilities across many domains, environments, and functions in time to achieve effects at any geographical location."⁵¹ It has as its goal using all instruments in its power to manoeuvre into positions of advantage, in conflict and without. Taken together with the expanded battlespace, this convergence leads to the last battlespace alteration, compression.⁵²

The compressed nature of the battlespace means that an adversary is able to attack coalition forces anywhere and anytime across the globe. The old style of force generation, staging and build-up in the rear area prior to deploying force to the combat is

49

50

⁵¹ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 7.

52

no longer viable.⁵³ These three changes lead to the new operational framework that the Multi-Domain Battle presents for battlefield visualization.

The new operational framework seeks to include all domains and give them a common operating picture and language from which to work. The expanded areas still reside in the physical realm as virtual attacks are still grounded in achieving physical effects.⁵⁴ It separates support areas into strategic, operational and tactical. This is most relevant to the United States, as its strategic area, or homeland, is separate from any operational theatre it may find itself in. The operational support area would include the nation hosting American forces in the theatre of operations, and the tactical support area is directly supporting the front line soldiers. This visualization of support areas is an excellent concept for Canada as it shares the same geographic realities with the United States. In the case of Poland, the Baltic states and even Germany, the strategic and operational support areas would most likely be under the same pressures and indiscernible from each other.

The highly contested close area is unchanged from that of the Air-Land Battle. It is where front line where formations battle, but it has been expanded and put a premium on mobility and tempo. The consequence of this is that there is less time to employ “centrally controlled, low-density capabilities.”⁵⁵ A unit or formation that is not self-sufficient in combat with its organic enablers will be at a severe disadvantage. It is these de-centrally empowered and self-contained seeking and creating windows of opportunity to out-manoeuver an enemy, break into its rear area and dislocate it.

⁵³

⁵⁴

⁵⁵ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 10.

The enemy's rear area is divided into the Deep Manoeuvre Area, Operational Deep Fires Area and Strategic Deep Fires Area. The Deep Manoeuvre Area is envisioned as into which a conventional land or maritime force can realistically penetrate and be able to sustain themselves. These are often viewed as operational objectives due to a forces capability to persist in them once they are taken. The Deep Fires Areas are beyond the manoeuvre of "...conventional forces, but can be contested by joint fires, special operations forces, information, and virtual capabilities."⁵⁶ Operational and Strategic Deep Fires are separated by the level of authorities and type of platforms required to access.

The Multi-Domain Battle thus lays out a clearly envisioned current operating environment and possible future one and new way of holistically conceiving the battlespace. It then follows these description with how it believes that the United States, and by extension its coalition allies, will compete and fight in the new scenario.

Components of the Solution

In order to succeed in this future operating environment, the Multi-Domain Battle has three key proposed solutions which include calibrating force posture, employing resilient formations and converging capabilities.

Force posture means ensuring that forward deployed formations can contest enemy aggression through mobility and firepower in concert with strong host-nation military support armed with counter-mobility, surface-to-air and surface-to-surface missiles. This combination of forward deployed and partner nation forces ensures that an aggressor state cannot quickly overwhelm an allied state using non-attributable actors and soldiers, quickly bolster its land claim with its own conventional forces and turn the

⁵⁶ Ibid, 9.

victory into a fait-accompli. Once the area is contested, expeditionary forces are deployed within days to reinforce forward forces and defeat the adversary.

Central in having it forces capable of fighting is ensuring that the formations are resilient. Resilience in this sense is the ability to be semi-independent with undefended flanks. This is achieved with a high degree of manoeuvrability and a strong organic fires and mobility capabilities and capacities. A resilient land element is still integrated with joint fires, but is not dependent on them, and has the ability to affect and support other domains.

The capability of all domains to affect more than just their own is the key to the last component of the solution in the new operational doctrine. The Multi-Domain Battle sees semi-independent elements striving for one purpose and affecting multiple domains, creating windows where an enemy force capability or area is overwhelmed.⁵⁷ This is how the doctrine plans to create enemy vulnerabilities and manoeuvre to dislocate, rather than ending up in an attrition battle fighting against A2AD.

Multi-Domain Battle Implications to Non-Land Domains

This paper focuses on the land domain; however, the assumptions and doctrine contained within Multi-Domain Battle have a variety of impacts for each domain. Although a full treatment of each of these domains is beyond the scope of this paper, all domains are interconnected and so merit a brief discussion.

In the Gulf War, land manoeuvre was preceded by an extensive air campaign to establish air dominance prior to the manoeuvre of ground troops.⁵⁸ In the Multi-Domain

⁵⁷ Kevin M. Woods and Thomas C. Greenwood, "Multidomain Battle: Time for a Campaign of Joint Experimentation," *Joint Forces Q16*

⁵⁸

Battle, the assumption of being able to maintain total air dominance prior to being able to use ground and sea forces is gone.⁵⁹ The doctrine makes the presumption that an adversary's "sophistication, density, and resiliency of defenses in the Deep Fires Areas generally preclude a longer-duration window of advantage in the air domain."⁶⁰ An air force is thus changed from providing constant close air support to enable ground manoeuvre, and instead focuses on fighting for windows of air superiority in order to suppress enemy fires.⁶¹

The implications for the air force overall is that it will be constantly fighting for windows of superiority instead of acting with impunity. Instead of directly supporting ground manoeuvre in the Close Area, it will be more focused on suppressing the enemy in the Deep Manoeuvre and Fires Areas.⁶² Specifically for the Royal Canadian Air Force, any multi-role fighter it operates in the future will need to be able to survive against modern enemy integrated air defences if it wants to contribute in any meaningful way to a coalition. It will no longer be the norm that an American suppression of enemy air defence (SEAD) campaign will make the theatre safe for 4th generation multirole fighters.

The maritime domain takes on a higher level of importance than in the previous generation's counterinsurgency wars. In some theatre, such as the Pacific Theatre, naval power "offers the most advantageous, and sometimes only, means of projecting power in the maritime, ground, or air domain."⁶³ Island hopping and amphibious/littoral operations become the focus, though this is not necessary a new trend as the future operating

⁵⁹

⁶⁰ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 40.

⁶¹

⁶²

⁶³ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 40.

environment has predicted the shift in importance to littoral operations for well over a decade.⁶⁴

The Multi-Domain Battle is almost attempting to add more of a manoeuvrist flavour to what is traditionally attrition warfare in naval combat.⁶⁵ The Multi-Domain Battle views “naval forces will converge joint capabilities to establish windows of advantage to bypass or defeat [the] enemy...”⁶⁶ The idea is to integrate “amphibious raids and assaults by naval forces with the manoeuvre of landward forces in the littorals” in order to for land and maritime forces to mutually support each other in the defeat of adversary sea-denial methods.⁶⁷

The implications for Canada would of course be the attempting to integrate land and maritime environments in a closer fashion. Exactly how this would be accomplished is outside of the realm of this paper, however, the operational doctrine would suggest adding amphibious transport capability to the Royal Canadian Navy’s already positive moves of re-establishing an air defence capability with the next Surface Fleet and addition of an adapted system for engaging ground targets with its Harpoon missile system.⁶⁸

The implications for special operations forces is hinted at in the description of the new battlespace, and is not a significant change from current practises, though it does mean a reorientation on defeating state actors.⁶⁹ In areas beyond the reach of conventional forces, special operations forces could be used to disrupt and reconnoitre

⁶⁴

⁶⁵

⁶⁶ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 41.

⁶⁷ *Ibid.*

⁶⁸

⁶⁹

enemy military and governance.⁷⁰ In the ever expanding cyber, informational and electronic warfare domains, special operations forces could also serve as delivery methods to gain access to protected systems and infrastructure.

Although military formations in combat will seek to remain effective even when separated from joint enabler support and networked communications, that loss of capability is not the desired state. Electronic and cyber warfare will become increasingly important, but will look differently depending on where it is being applied.⁷¹ Static strategic headquarters with electronic and cyber capabilities will be important in protecting the Strategic Support Area, but do not necessarily need to be staffed solely with military personnel if at all. Non-deployable positions could very well be entrusted and coordinated with civilian agencies, in line with the whole-of-government approach. Even if the lion's share of the cyber capability could reside in locations like the Communications Security Establishment, the military would still need deployable cyber and electronic warfare specialists.

This is because these specialist will need to exist in the resilient, semi-independent units and formations manoeuvring in the battlespace, not to mention being able to deploy with special operations forces for entry into Deep Fires Areas. Without these specialist present with the forces, there is a real threat that a coalition will quickly lose the contest for the cyber and electronic domains.

Without cyber and electronic means, this also has an effect on a coalition's ability to dominate an information campaign. The means to quickly communicate information, and incorporate ground facts into narratives both to adversaries, allies and the homeland

⁷⁰ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 34.

⁷¹

would present a severe disadvantage. This informational level of war is and will continue to be as key a component in competition or conflict as physical and electronic effects, but it will need to be meaningfully integrated into all other domains.

Informational warfare is not a new development, and those times when it was based on a faulty assumptions or poor cultural understanding have led it to being a waste of resources. Informational domain will need mastery of cultural understanding over mastery of arid military doctrine. The Multi-Domain Battle attempts to ensure success by creating close relationships with partnered forces and using forward deployed forces to create links with a host nation.⁷²

Space is becoming more accessible through lower cost private and public launch vehicles and lower weight satellites.⁷³ As RAND research states, “a growing array of national actors will have the capacity to interfere with or directly attack satellite systems that threaten their security interests during the time of covert or overt regional conflict.”⁷⁴ The implication is that any land force should expect to have to operate in a network degraded environment and have alternate communication methods available.

4. APPLICABILITY OF AMERICAN DOCTRINE TO CANADA

American Classification of Operational Level

The United States prescribes to the classic great power definition of the operational level linking tactical actions to strategic thought. The official definition of the operational level of warfare is “The level of warfare at which campaigns and major

⁷² Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 24.

⁷³ David Ochmanek *et al*, *U.S. Military Capabilities and Forces for a Dangerous World: Rethinking the U.S. Approach to Force Planning* (Santa Monica, California: RAND Corporation, 2017), 121-123.

⁷⁴ *Ibid.* 122.

operations are planned, conducted, and sustained to achieve strategic objectives within theaters or other operational areas.”⁷⁵ This is separated from the Strategic Level, where a nation determines national or multinational “security objectives and guidance” and the tactical level where elements complete assigned military tasks.⁷⁶

In addition to these levels it could be argued, as it was by the Soviet theorist Aleksandr Svechin, that a political level rests above the strategic military security objectives.⁷⁷ The American Strategic Level of Warfare combines the political element in the person of the Commander-in-Chief, the President, with the military strategic plan being developed by the combatant commander in theatre.⁷⁸ The joint force commander

In the American view, the mass of the force matters. Although not exactly laying out a force size, the operational level of war requires a force that can contest a theatre of war. Americans differentiate operational level manoeuvre as something that “usually takes large forces from a base of operations to an area where they are in position of operational reach from which to achieve operational objectives.”⁷⁹ This is in contrast to tactical manoeuvre that is used in conjunction with fires to achieve a position of advantage against an enemy.⁸⁰

The scale of an operational level is what is necessary to affect an enemy not only in the close fight, but throughout its depth. This was first articulated by the Soviet theorists such as Tukhachevsky and Triandafillov, in the idea of the Deep Battle.⁸¹ The

⁷⁵ Joint Chiefs of Staff, *Joint Operations*, JP 3-0 (n.p. 17 January 2017), GL-13.

⁷⁶ *Ibid.* GL-14-GL-15.

⁷⁷ Aleksandr A. Svechin, *Strategy*, ed. and trans. Kent D. Lee (Minneapolis, Minnesota: East View Information Services, 2004), 70.

⁷⁸ Joint Chiefs of Staff, *Joint Operations*, JP 3-0 (n.p. 17 January 2017), II-13.

⁷⁹ *Ibid.* III-35.

⁸⁰ *Ibid.*

⁸¹ Georgii Samoilovich Isserson, *The Evolution of Operational Art*, trans. Bruce W. Menning (Fort Leavenworth, Kansas: Combat Studies Institute Press, 2013), xvi-xvii.

main idea that an enemy would be attacked throughout its depth with a combined series of operations.⁸² One unit or small formation is not generally capable of attacking and supporting itself throughout an enemy's depth and frontage.

Canadian Classification of Operational Level

The Canadian military cannot generate the large number of forces necessary to meet the threshold for operational level as is done by great nations.⁸³ Some academics claim that “[a]rguably, Canadian army commanders have never been in a position either to plan a campaign or to practice operational art.”⁸⁴ In the strictest definition of the term, the one to which the American military prescribes, this is true. Canada, as a country does not control theatres of war like great nations. Instead it contributes to coalitions, whether operating with its historic attaching forces to those of the British Empire or more recent American led coalitions in Afghanistan. One opinion is that the operational level does not truly exist in Canada, instead it is replaced by an idea of “contribution warfare.” This style of warfare involves the end state of the Canadian Government, its Strategic Political aims, being the act of contributing forces to a coalition; in other words, nations “...protecting their national interests while ‘campaigning’ rather than pursuing their interests through a campaign.”⁸⁵ Although the argument is abridged in this paper, the end view of Canada is a country with a strategic level and a tactical one, with its chief

⁸² *Ibid.*

⁸³ Allan English, “The Operational Art: Theory, Practice, and Implications for the Future,” *Operational Art: Canadian Perspectives: Context and Concepts*, ed. by Allan English et al, (Kingston, Ontario: Canadian Defence Academy Press, 2005), 9.

⁸⁴ William McAndrew, “Operational Art and the Canadian Army’s Way of War,” *The Operational Art: Developments in the Theories of War*, ed. B.J.C. McKercher and Michael A. Hennessy (Westport, Connecticut: Praeger Publishing, 1996), 87.

⁸⁵ J.H. Vance, “Tactics Without Strategy or Why The Canadian Forces So Not Campaign,” *Operational Art: Canadian Perspectives: Context and Concepts*, ed. by Allan English et al, (Kingston, Ontario: Canadian Defence Academy Press, 2005), 271.

concern on how to best integrate and show contribution to a coalition, and less about having an operational commander deployed into a theatre in order to translate Canadian strategic intent to the tactical military actions.

The argument is persuasive that Canada has nothing in the way of a classic sense of the operational level, however, Canada still does put the operational level into doctrine and a modified version may be appropriate. In his article, Simms takes a different view, and one that seems more mainstream in Canadian military culture. He breaks the operational art into “four distinct functions: operational-level command, operational-level structures, operational-level infrastructure, and campaigning.”⁸⁶ His idea regarding what constitutes an operational-level of command, is one in where the “strategic level is convinced that the size, complexity or effect required is such that a level of command between the strategic and tactical levels is required.”⁸⁷ Of course, this command will be supported with a staff, when required as well. How this command element that is translating Canadian strategic direction into action to Canadian tactical forces detached to a coalition, is one of interest. First of all, by Canadian strategic direction, it is safe to assume that the political strategic is being considered and not some grand Canadian military strategy that diverges from that of its allies. This definition, seems to speak more to an in-theatre intermediary for the Canadian political will, one that ensures that an organization exists to represent and uphold, on behalf of the tactical forces deployed, the Canadian national interests. A good fit for this style of headquarters can be found in the

⁸⁶ James Simms, “Keeping the Operational Art Relevant for Canada: A Functional Approach,” *Operational Art: Canadian Perspectives: Context and Concepts*, ed. by Allan English et al, (Kingston, Ontario: Canadian Defence Academy Press, 2005), 293.

⁸⁷ *Ibid.* 299.

National Command Element, deployed to Afghanistan.⁸⁸ This was not a commander or staff that was commanding the Afghanistan Theatre and campaign, but rather a tool of influence on that coalition headquarters that protected Canadian interests.⁸⁹

The third function that Simms describes is that of operational-level infrastructure. In this he speaks about the logistics infrastructure that is required to support deployed force elements.⁹⁰ The current doctrine for Canada identifies the Joint Task Force Support Element, which is, in many ways, analogous to Afghanistan's National Support Element. This organization looks after the administration of deployed Canadian forces and ensures logistical support on unique national items.⁹¹

Finally, he states that Canada does indeed campaign plan like the Americans, but that a Canadian campaign plan may be done at either a strategic or a tactical level as well as the operational one.⁹² The example given of his experience on *Operation Eclipse* in East Africa as part of a United Nations Mission in 2001, did not feature a campaign plan.⁹³ Although it is undoubtable that military forces plan at all levels, just the presence of planning does not equate automatically to a campaign plan. An interesting example of this can be found in Dr. Coombs' article regarding the Canadian Whole of Government Approach in Afghanistan from September 2010 to July 2011. In the article, from 2006 to 2009 there existed a number of "locally designed" national campaigns across...

⁸⁸ House of Commons, Standing Committee on National Defence, *Canadian Forces in Afghanistan*, 39th Parliament, 1st Session, June 2007, 50.

⁸⁹ *Ibid.*

⁹⁰ James Simms, "Keeping the Operational Art Relevant for Canada: A Functional Approach," *Operational Art: Canadian Perspectives: Context and Concepts*, ed. by Allan English et al, (Kingston, Ontario: Canadian Defence Academy Press, 2005), 299.

⁹¹ House of Commons, Standing Committee on National Defence, *Canadian Forces in Afghanistan*, 39th Parliament, 1st Session, June 2007, 50.

⁹² James Simms, "Keeping the Operational Art Relevant for Canada: A Functional Approach," *Operational Art: Canadian Perspectives: Context and Concepts*, ed. by Allan English et al, (Kingston, Ontario: Canadian Defence Academy Press, 2005), 300.

⁹³ *Ibid.* 304.

Afghanistan.”⁹⁴ Each country, with its specific area of operations was creating its own ‘campaign plan’. This was corrected “with a more clearly defined international campaign leadership in late 2009 and the influx of tens of thousands of additional American troops.”⁹⁵ In other words, the American coalition introduced a campaign plan, integrated those national tactical plans within it, and deployed additional forces into the theatre to execute it. Once the campaign plan was set, the “national undertakings [were] fully integrated into broader international counterinsurgency and nation-building campaigns which... [began] to coalesce.”⁹⁶ This illustrates the difference between what Canada considers a national ‘campaign plan’ within a theatre and the classic view of an operational-level theatre campaign plan.

All three authors are considering the same Canadian situation and each has a different view of what the operational level truly is to Canada. Simms’ view seems most in keeping with that of the Canadian Armed Forces, even with its less than effective view of ‘campaign planning.’ The evidence that the Canadian Armed Forces views the operational level in this way is the manner in which it invests its finite resources. The existence of the Canadian Joint Operations Command, as well as the 1st Canadian Division Headquarters and the six division-level Joint Task Force headquarters far outstrip in terms of headquarters any tactical forces or effects that Canada would be able to produce.⁹⁷

⁹⁴ Harold Coombs, *Canadian Whole-of-Government Operations in Kandahar* (Ottawa, Ontario: Conference of Defence Associations Institute, 2012), 4-5.

⁹⁵ *Ibid.*

⁹⁶ *Ibid.*

⁹⁷ A comparison could be the three division headquarters (plus Special Operations Headquarters) of Australia, a military analogous in terms of domestic geographic dispersion. https://www.army.gov.au/sites/g/files/net1846/f/publications/australian_army_structure_as_at_jan_2018.pdf

A McAndrews' view of this investment might be one that it reflects Canada's "emphasis on management, staff bureaucracy, and top-down direction..." but this is not necessarily the whole story. Blending the implication of Vance's and Simms' reading of the operational level can perhaps demonstrate how it is used in practise.⁹⁸ The operational level is a bridge for Canada to ensure that the Canadian tactical contributions are reflecting the national political will, while also ensuring that expeditionary forces administrative and specific logistic needs are met.

A Canadian operational headquarters is empowered by its tactical contributions to a coalition, In essence, those tactical contributions ensure that Canada can send an operational headquarters in order to influence the actual operational level coalition headquarters in the theatre of war.

A useful, and very much simplified, tactical level analogy to illustrate the Canadian definition of operational level could be made when considering the detachment of helicopters to a brigade. The brigade may have operational control over the helicopters, tasking them, incorporating them into plans and providing general supplies and consumables. The helicopter unit from which the helicopters were detached still might have the responsibility to administer its soldiers and to provide specific equipment repairs. In addition, the brigade does not maintain full authority over the helicopters, and the originating helicopter unit may add caveats to their use or veto a brigade decision based on policies such as flight safety. The brigade in this context would be a coalition operational headquarters, the helicopters would be the Canadian tactical contribution and the helicopter unit would be the Canadian operational level headquarters, which is not

⁹⁸ William McAndrew, "Operational Art and the Canadian Army's Way of War," In *The Operational Art: Developments in the Theories of War*, ed. by B.J.C. McKercher and Michael A. Hennessy (Westport, Connecticut: Praeger Publishers, 1996), 97.

directly commanding its detached helicopters in the fighting of conflict, but still has logistic and administrative responsibilities and indirect power to influence the brigade's use of the assets.

In summary, Canada's and the United States' understanding of the operational level, while similar, are divergent. Inasmuch as Canada is required to be able to interoperate with the American Military and coalitions, it teaches its leaders to understand and execute the classic definition of the operational art, but as a country Canada does not completely practise it. This is especially important to remember when reading and comparing both countries' doctrine. Additionally, if Canada is to contribute to American-led coalitions, the forces contributed and the doctrine used must be able to be nested within the American coalition's operational level doctrine for interoperability purposes.

Adapted Dispersed Operations: Tactical or Operational Doctrine?

Canada's future vision, since 2007, has been Adaptive Dispersed Operations, detailed in *Land Operations 2021*. Adaptive Dispersed Operations was chosen as the comparison, as it provides the force employment concept to which the Canadian Army still strives.⁹⁹ While the American Army classifies the Multi-Domain Battle as “an operational concept with strategic and tactical implications,” the Canadian Army states that Adaptive Dispersed Operations are a hybrid of both operational and tactical levels.¹⁰⁰ In *Land Operations 2021*, the land force “... operates at the operational and tactical

⁹⁹ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 7.

¹⁰⁰ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 1; Department of National Defence, B-GI-310-001/AG-001, *Land Operations 2021: The Force Employment Concept for Canada's Army of Tomorrow* (Kingston: Army Publishing, 2007), 14.

levels, within a JIMP [Joint, Interagency, Multinational and Public] framework...¹⁰¹ As discussed in the previous section, “operational” does not necessarily mean the same thing to Canadians as it does to Americans. Although the doctrine most certainly fits the Canadian view of operational level, when Canada operates in a coalition Adaptive Dispersed Operations should be classed as tactical level doctrine with operational implications.

The first is that the size of the forces described is generally considered at a tactical level by the American, and even the doctrine Canadian have adapted from them.¹⁰² Land Operations 2021 uses as a force template a brigade headquarters commanding a Battle Group and separate combat enabler and support sub-units.¹⁰³ It does leave space for other nations to place manoeuvre and enabler units under Canadian command to form a full brigade, but even with these additions, a brigade is not considered a theatre controlling asset by the Americans.¹⁰⁴

Secondly, the doctrine calls for “highly deployable” forces, but does not cover entrance into theatre and theatre sustainment. The result is not a doctrine built to guide a military responsible for a region or country, but one that has already had a tactical area of responsibility defined by an operational-level headquarters.¹⁰⁵

Most tellingly though is Adaptive Dispersed Operations omission on how it intends to defeat an enemy campaign in a theatre of war. Adaptive Dispersed Operations is well nested within American stabilization doctrine, with its ‘whole-of-government’, but

¹⁰¹ Department of National Defence, B-GL-310-001/AG-001, *Land Operations 2021: The Force Employment Concept for Canada’s Army of Tomorrow* (Kingston: Army Publishing, 2007). 14.

¹⁰² Department of National Defence, B-GL-321-001/FP-001, *Land Force Multinational Corps Operations – Corps Operations*, (n.p. 1998), 1.

¹⁰³
¹⁰⁴ Corps Operations (Canadian)
¹⁰⁵

does not have the lexicon to deal with a high intensity battlespace. It focuses primarily on the close fight with its overall combat/stabilization force employment strategy housed under the chapter titled ‘Tactical Decisiveness.’¹⁰⁶ The operational level is achieved through the land force supporting “...the operational integration of effects through the fielding of units and soldiers fully capable of operating within a standing contingency...”¹⁰⁷ In other words, contributing to a coalition.

This operational effect is understandable when placed into the strategic goal of Canadian military forces under *Land Operations 2021*, which is to “retain a ‘seat at the table’ in a range of international organizations and coalitions...”¹⁰⁸ This definition of the tactical level achieving political strategic goals through contribution to a coalition is very much in line with concept of ‘contribution warfare’ detailed in Vance’s article, but does not fit a definition for operational level doctrine.¹⁰⁹

Air-Land Battle Assumptions in Canadian Army Doctrine

The previous operational doctrine of United States led coalitions has ingrained assumptions in how the Canadian Army operates. Whether overtly stated or inferred, much of how the Canadian Army currently fights and is organized is built on four assumptions: safe staging areas, coalition air dominance, support of coalition enablers and secure communications.

The reliance on safe staging areas affects much of the way that the Canadian Army is equipped and fights. As previously mentioned, *Land Operations 2021* is

¹⁰⁶ Department of National Defence, B-GI-310-001/AG-001, *Land Operations 2021: The Force Employment Concept for Canada’s Army of Tomorrow* (Kingston: Army Publishing, 2007), 28.

¹⁰⁷ *Ibid.*, 31.

¹⁰⁸ *Ibid.*, 4.

¹⁰⁹ J.H. Vance, “Tactics Without Strategy or Why The Canadian Forces So Not Campaign,” *Operational Art: Canadian Perspectives: Context and Concepts*, ed. by Allan English et al, (Kingston, Ontario: Canadian Defence Academy Press, 2005).

predicated with a land force already in theatre with its equipment. To accomplish this, a secure base in the style of Afghanistan would have to be set up, with operational support hubs also established. Canada is well acquainted with this style of expeditionary force. The country force generates from unprotected bases and training areas and deploys through its network of operational hubs to operating bases where build up can occur in relative safety.

Multi-Domain Battle challenges the assumption of safe staging areas. Its assumption is that force deployment will be contested throughout the deployment.¹¹⁰ The threat morphs from terrorist activities and information operations to disrupt bases and training areas generating forces to physical attacks on operational hubs to the absence of a safe in-theatre staging area to amass forces.¹¹¹ The Multi-Domain Battle calls for forces being prepared to fight as soon as they are in-theatre, which requires a high level of self-reliance and self-sufficiency of the force.

A second assumption that has been made within the Canadian Army is that a coalition can and will fill land force capability gaps. The Canadian Military is, relative to the United States, a small force. Across the military, the Canadian Armed Forces has sought to grow in terms of capabilities especially with emerging trends at operational levels. This has led to a ruthless pursuit of efficiency with the Canadian Army, oftentimes resulting an elimination for capabilities deemed less-desirable for fighting the counter-insurgency in Afghanistan. Hence, anti-armour tasks could be done by tanks, mortar support could be a secondary duty of artillery batteries, and anti-air capability was divested. The resulting organization was lean on combat functions, adapted to an

¹¹⁰ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 24.

¹¹¹ *Ibid.*

intelligence centred counter-insurgency fight, and relying on key tactical level coalition capabilities, such as close air support, should any high-intensity combat occur.

The Multi-Domain Battle's assumption is that a land force will be self-reliant and adaptable. That calls for a versatile land force which is able to be adapt and operate in high-intensity conflict. In this case, efficiency is at odds with effectiveness inasmuch that a versatile force requires all full suite of capabilities and certain redundancies in capability and capacity in order to survive. Under the current Adaptive Dispersed Operations construct, the brigade minus and battlegroup would be too weak to operate as a component of a Multi-Domain Battle.

Compounding this is the American expectation that its own units will be self-reliant and more decentralized, leaving less spare enablers at a brigade and division level to loan out to allies. This is not to attack the current Land Operations 2021 land force structure, but only to demonstrate that it is efficiently adapted for a different type of conflict, one that features unfettered dominance of the air domain.

The next assumption that is made by Land Operations 2021 is that coalition air power is absolute. A Canadian Battlegroup can operate with a relatively weak indirect and anti-armour capabilities because it can rely on its mastery of joint force close air support. The air support provides the fires necessary to enable manoeuvre on the battlespace, especially with the highly dispersed nature of manoeuvre sub-units and their lack of organic indirect capability.¹¹²

Additionally, air dominance is a key precondition of sustainment support as well,

¹¹² Department of National Defence. *Close Engagement: Land Power in an Age of Uncertainty*, (draft) (n.p., 6 July 2017), 27-28.

with helicopters being central to the resupply of disparate forces.¹¹³ All of this flows from Air-Land Battles underlying theme that the land force would be supported by the air force.

Once the Multi-Domain Battle's assumption of contested air space is factored in, a Canadian land force informed by Adaptive Dispersed Operations can no longer effectively manoeuvre or sustain itself. Worse, a land force under the Multi-Domain Battle is expected to support other domains at times, including being able to affect the air domain – a task for which a Canadian land force currently would be unable to accomplish.

The last of the four assumptions is that of network access. Repeatedly throughout Land Operations 2021 it is states that Adaptive Dispersed Operations is “highly dependent on the network,” and that “The network is central to the Land Operations 2021 concepts.”¹¹⁴ Although it does admit that the network may come under attack and that investments need to be made to ensure access, nowhere does the doctrine allow for a sustained inaccessibility of connectivity.

The assumption of a contested network and the probably isolation of units and formations is central to the Multi-Domain Battle with convergence instead of integration being the central tenant. More exactly, “[u]nlike integration, which the Joint Force does today through a federation of systems and processes, convergence requires organizations... that are organically organized, trained, authorized, and equipped to

¹¹³ Department of National Defence, B-G1-310-001/AG-001, *Land Operations 2021: The Force Employment Concept for Canada's Army of Tomorrow* (Kingston: Army Publishing, 2007), 32.

¹¹⁴ Department of National Defence, B-G1-310-001/AG-001, *Land Operations 2021: The Force Employment Concept for Canada's Army of Tomorrow* (Kingston: Army Publishing, 2007), 24 and 34.

access, plan, sequence, and operate together...”¹¹⁵ The difference is not one of semantics, integration means being able to fight together, while convergence means that as well as being able to fight isolated towards a unifying purpose. The network will be an important part of that vision, but cannot be its critical vulnerability.

The assumptions that the Canadian Army has made have come from operating for years under the auspices of American coalitions fighting ‘Small Wars’. In that time, the army adapted very effectively to the problem set presented to it, creating efficiencies that allowed it to specialize itself to the fighting counterinsurgency. As the realities that informed American coalitions now change, the Canadian Army finds itself needing to be reoriented to ensure its viability in a new world.

5. MULTI-DOMAIN BATTLE AND THE CANADIAN ARMY

SWOT Analytical Tool

SWOT Analysis is a civilian strategic analytical tool that is used to evaluate organizations.¹¹⁶ The main critique of this analysis tool is “while [it] is useful to profile and enumerate issues, it does not provide actual strategies to implement...”¹¹⁷ SWOT Analysis is therefore an appropriate tool for this paper as its aim is not to suggest a comprehensive replacement for the Canadian Army’s doctrine, organization and equipment, but to identify the broad implications of the Multi-Domain Battle to the aforementioned.

¹¹⁵ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 3.

¹¹⁶ Alex Coman and Boaz Ronen, “Focused SWOT: diagnosing critical strengths and weaknesses,” *International Journal of Production Research* vol. 47, no.20 (13 October 2009): 5677.

¹¹⁷ Marilyn M. Helms and Judy Nixon, “Exploring SWOT analysis – where are we now? A review of academic research from the last decade,” *Journal of Strategy and Management*, Vol. 3, Iss. 3 (2010): 229.

SWOT is an acronym for its four headings: strengths-weaknesses-opportunities-threats. The strengths and weaknesses are those that are internal to the organization, in this case the Canadian Army. Opportunities and threats are the positive and negative trends affecting an organization that are external to it.

Rather than take a laundry list approach to the SWOT Analysis of the Canadian Army integrating into a future Multi-Domain Battle based coalition, this paper focuses on a few elements under each heading. This provides a broad overview of how the Canadian Army currently stands in its ability to adapt to the emerging Multi-Domain Battle.

SWOT Analysis: Strengths

A strong pro for the Canadian Army is that its current doctrine and training is closely aligned with that of the Americans. The average soldier in the Canadian military is educated, a volunteer and from a generation of a high level of technological savvy.¹¹⁸ All of these attributes lend themselves to personnel who are capable of flourishing in an ever complex environment.

There is, of course, counter arguments to the decentralized initiative taking view of the Canadian soldier. Writing in the mid 1990's, McAndrew's article on the Canadian way of war criticized the centralized responsibilities, rigid orders and bureaucracy of the Canadian Army in the Second World War.¹¹⁹ He believed that it was doubtful that the Canadian Army had substantially changed since then since the "[e]mphasis on management, staff bureaucracy, and top-down direction mirrors Canada's other

¹¹⁸ Jungwee Park, "A profile of the Canadian Forces," *Statistics Canada* (July 2008), 18.
<http://www.statcan.gc.ca/pub/75-001-x/2008107/pdf/10657-eng.pdf>

¹¹⁹ William McAndrew, "Operational Art and the Canadian Army's Way of War," *The Operational Art: Developments in the Theories of War*, ed. B.J.C. McKercher and Michael A. Hennessy (Westport, Connecticut: Praeger Publishing, 1996), 97.

institutional structures: social, economic.”¹²⁰ This view, however, needs to be placed within the context of the time. A time when the Canadian Army was facing an internal crisis as it still reeled from the Somalia Affair. McAndrews was arguing for a greater focus on operational art and, above all else, better education throughout the military.¹²¹

Although there is always room for improvement in any organization, it would be unfair to equate the Canadian Army of that time to its current form. New education practices and the study of the operational level of war were all instituted into the Canadian Armed Forces, much of it based off post Somalia-Affair reforms. In addition, the experience in Afghanistan had Canadian land forces operating in highly dispersed roles and decentralized locations. This was the case not only in the Battle Group setting, but also as small Operational Mentor and Liaison Teams and Provincial Reconstruction Teams. These experiences and institutional changes lend to view of a capable decentralized and initiative-driven leaders. This resident experience within the Canadian Army, along with the doctrine that enabled it, has well placed the Canadian Army to thrive within the future battlespace.

One feature of the Adaptive Dispersed Operations is the joint interagency multinational public (JIMP) framework that it espouses.¹²² The JIMP concept folds neatly into the requirement of a force when conduction operations in the pre- and post-conflict competition phases. Firstly it promotes the convergence of military, other government departments and non-government actors in terms of purpose, in order to achieve political

¹²⁰ *Ibid.*

¹²¹ *Ibid.*

¹²² Department of National Defence, B-G1-310-001/AG-001, *Land Operations 2021: The Force Employment Concept for Canada's Army of Tomorrow* (Kingston: Army Publishing, 2007), 25.

aims that cannot be obtained through military power alone.¹²³ This idea is borne out from the stabilization and counterinsurgency missions with which Canada has been involved. The JIMP approach is valuable in a competition phase. Prior to a conflict, the “soldier as a diplomat” concept allows the Canadian land force contingent to build relations with a host nation where they may be stationed, critically establishing cooperation and trust to present a strong front against any would be aggressor state or non-state actor.¹²⁴ In post conflict, the same concept proves critical in that the allied state or potentially a former adversary is rebuilt along desired lines.¹²⁵ JIMP is not the only tenant that successfully enables Canadian officers and soldiers under emerging American doctrine.

The Land Operations 2021 also supports the mission command philosophy so central to the Multi-Domain Battle.¹²⁶ In Adaptive Dispersed Operations, the doctrine calls for an empowerment of sub-ordinate leaders able seek initiative in line with their superiors overall goals. This style of warfare is only viable when the society’s culture and education permit it, to change it would take a generation. As mission command is a central tenet of the Multi-Domain Battle, the Canadian Army’s culture is well positioned to make the transition with equipment and organization being relatively easier to modify when political will exists.

SWOT Analysis: Weaknesses

The Multi-Domain Battle requires its forces to manoeuvre from North America in “days, not months,” be prepared to fight immediately upon entry into theatre and conduct

¹²³ *Ibid.*

¹²⁴ Department of National Defence, B-G1-310-001/AG-001, *Land Operations 2021: The Force Employment Concept for Canada’s Army of Tomorrow* (Kingston: Army Publishing, 2007), 24.

¹²⁵ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 46.

¹²⁶ *Ibid.*, 23.

semi-independent, cross-domain manoeuvre.¹²⁷ Canada has an educated volunteer army that excels at adaptation and initiative, but it also has a liability in its ad hoc, adapted and often incoherent force structure. As SWOT Analysis of weakness focuses on issues within an organization, this will speak to the incoherence of the land force's vision and not on procurement or funding problems.

The "Army of Tomorrow" viewed the land force as "medium weight."¹²⁸ The current Canadian *Land Operations* defines a medium force as "strategically and operationally more deployable than heavy forces, and may be among the first elements to deploy into a theatre or operations."¹²⁹ This is analogous to the American Stryker Brigade Combat Team idea, which was viewed as a bridge between the powerful armoured heavy forces of Abrams Tanks and Bradley Infantry Fighting Vehicles, and the rapidly deployable light forces consisting of soft-skin vehicle equipped air assault, airborne and infantry soldiers.¹³⁰

The Stryker Brigade Combat Team, or the Objective Force as it was initially known, shared elements of what the Multi-Domain Battle's response force requires, namely reduced sustainment requirements, strategic responsiveness and enough mobility and protection to manoeuvre on the battlefield.¹³¹ It accomplished this by creating a suite of vehicles, including anti-armour, mortar, infantry carrier, fire support, engineer, reconnaissance, medical support, mobile gun system and command.¹³² They would be

¹²⁷ *Ibid.*

¹²⁸ Designing Canada's Army of Tomorrow, 56

¹²⁹ Canada, *Land Operations*, B-GL-300-001/FP-001, 2008. 1-5

¹³⁰ Alan Vick et al, *The Stryker Brigade Combat Team: Rethinking Strategic Responsiveness and Assessing Deployment Options* (Santa Monica, California: RAND Corporation, 2002), 1-2.

¹³¹ *Ibid.*, 9.

¹³² *Ibid.*, 7.

lighter in armour to be transportable by C-130 but networked with an array of ISR assets to survive the battlespace.¹³³

The Canadian Army promulgates the myth of its medium weight force. The current force structure is not a medium weight force in terms of deployability. The workhorse of the Canadian Army was originally the Light Armoured Vehicle III (LAV III), this was the template for the American Strykers.¹³⁴ The LAV III was upgraded to the Light Armoured Vehicle 6.0 (LAV 6) primarily to increase armour protection versus improvised explosive devices encountered in the Afghanistan War.¹³⁵ The upgraded size and weight of the LAV 6 is considerably heavier than its predecessor, to the point that its size and weight are so close to that of the American Bradley M2A3 that their strategic mobility is the same.¹³⁶ What's more, without the suite of capabilities of a Stryker Brigade, the Canadian mechanized force relies on tanks to engage enemy armoured forces. Thus a Canadian land force cannot be deployed into a medium to high intensity conflict without them.

The Canadian Army is developing light forces to offer a range of choice to the Canadian Government, but the result of this initiative will leave the Canadian Army with heavy and light forces; in other words, the same dilemma that initiated the American Army to develop the medium force structure in the first place.¹³⁷ Having a doctrine based on a faulty assumption of force composition may result in the Canadian Army ineffectively training, equipping and employing its land forces. As will be discussed in

¹³³ *Ibid.*, 9

¹³⁴ *Ibid.*, 7.

¹³⁵ GDLS Canada, "LAV 6.0 Brochure" <http://www.gdlsCanada.com/files/products/LAV-6.0.pdf>

¹³⁶ BAE Systems, "Bradley A3 datasheet" <https://www.baesystems.com/en/product/bradley-fighting-vehicle> ; GDLS Canada, "LAV 6.0 Brochure" <http://www.gdlsCanada.com/files/products/LAV-6.0.pdf>.

¹³⁷ Alan Vick et al, *The Stryker Brigade Combat Team: Rethinking Strategic Responsiveness and Assessing Deployment Options* (Santa Monica, California: RAND Corporation, 2002), 1-2.

the opportunities section of the SWOT Analysis, Canada does not necessarily need one particular force composition, but it is essential under the Multi-Domain Battle that Canada's land force are coherent and self-reliant in the way it is trained, equipped and employed.

This coherence is central to creating a resilient force that can operate semi-independently in the battlespace. Resilient formations are a key component to how the Multi-Domain Battle sees a formation being able to deploy quickly as an expeditionary force and manoeuvre semi-independently in the battlespace. In theory, Adaptive Dispersed Operations has mostly organized the Canadian land forces in this manner minus a few capabilities deemed unnecessary for counterinsurgency operations. In practice, however, the Canada's Army has instituted numerous short-term adaptations that make the force incoherent with its own doctrine and unable to be part of the resilient formation called for by the Multi-Domain Battle.

These adaptations have stripped the Battle Group, let alone brigades, of mobile anti-armour and never truly developed the suite of mobile anti-air and indirect assets needed to manoeuvre without direct air support. The Canadian military is currently instituting adaptations to its vehicles for greater protection vis a vis improvised explosive devices, while the Americans are making some improvements to mine protection, the focus is more on an increase to mobility and lethality of their forces.¹³⁸ The changes for the Americans fit into the Multi-Domain Battle concept. Canada's changes were made for the improvised explosive threat, and came at the cost of the aforementioned decrease in strategic mobility. There is nothing wrong with a heavy force composition, but a

¹³⁸ Christopher Woody, "Watch the Army test upgraded armor vehicles meant to counter increased Russian firepower," *Business Insider* (17 August 2017). <http://www.businessinsider.com/watch-the-army-stryker-cannon-and-missile-upgrades-2017-8>

Canadian land force, ill-equipped in anti-armour, anti-air and indirect fire does not have the offensive capacity or capability to match its weight.¹³⁹

The Multi-Domain Battle breaks force posture into components for the solution to evolving threats. The force posture is broken into forward presence forces, expeditionary forces and partnered forces.¹⁴⁰ Partnered forces offer “essential capacity, unique capabilities, and key terrain required to defeat enemy systems in competition and in armed conflict.”¹⁴¹ Unless operations are occurring in Canada’s arctic, key terrain is unlikely to be a Canadian contribution to a coalition. Likewise, due to Canada’s fairly similar cultural makeup to the United States and lack of comparable resources dedicated to military research and development, outside of bilingualism, the Canada Army is unlikely to have unique capabilities of great value to an American coalition. This leaves the primary contribution to force posture being that of capacity, lending morale support and solidarity with the United States by contributing interoperable forces. For those forces to be of value under Multi-Domain Battle, they should be able to effectively contribute to one of the two previous force posture categories: forward presence forces or expeditionary forces.

Forward postured forces can be heavier forces, as they will use manoeuvre in the close area alongside a partner nation’s counter mobility, surface-to-surface and surface-to-air missile systems to immediately contest an aggressor nation and impose uncalculated

¹³⁹ Canada in comparison, has no air defence, 2 x dismounted TOW anti-armour available only to the dismounted infantry (with no carrier vehicle) and the artillery which can man six 155mm guns or the 81 mm infantry mortars, but simultaneously – versus, the Americans, British or Australian models which feature motorized anti-armour, the existence of anti-air capability and mortar within a manoeuvre unit.

¹⁴⁰ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 23.

¹⁴¹ *Ibid.*, 24.

cost and time to an enemy.¹⁴² This gives time for the expeditionary forces to be deployed “within days not months into the Close Area.”¹⁴³ The Canadian Army could decide whether it can provide capacity into one or both of those forces but it must ensure that whichever paradigm is chosen is fully capable of achieving its task and meeting additional tasks given to it by the Canadian Government.

In regards to doctrine, the weakness of the Adaptive Dispersed Operations is that though it mentions combat, it does not address the high-intensity variety that Canada would be expected to face against a state actor. It is a force employment strategy firmly rooted in counterinsurgency and stabilization operations, and evidence of this is found throughout Land Operations 2021. The dispersed teams of Adaptive Dispersed Operations “provide an effective means of engaging local civilian authorities and interagency representatives involved in the whole of government campaign plan.”¹⁴⁴ This main reason for dispersion is understandable only in a competition context, and it is further stated that elements should only be dispersed if it can “overmatch the adversary it is likely to encounter in terms of firepower, mobility, protection, information, and leadership.”¹⁴⁵ A goal that is achievable in a counterinsurgency, but incredibly difficult to predict in the future operating environment envisaged by the Multi-Domain Battle.

In an environment where the information and electronic domains are contested by an adversary, being able to develop situational awareness while out of contact becomes problematic as the network itself is degraded. The semi-independent elements

¹⁴² Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 33-34.

¹⁴³ *Ibid.*, 33.

¹⁴⁴ Department of National Defence, B-G1-310-001/AG-001, *Land Operations 2021: The Force Employment Concept for Canada's Army of Tomorrow* (Kingston: Army Publishing, 2007), 21.

¹⁴⁵ *Ibid.*

manoeuvring in the battlespace use mission command orders to converge towards a common goal, despite being informationally and physically isolated from other friendly forces. This resilient formation or unit is constantly moving as it is overmatched by adversary fires, it is through converged effects that windows of opportunity are achieved to displace the adversary.

In Adaptive Dispersed Operations, dispersed elements need to coalesce back into larger unit or formation if overmatch cannot be achieved.¹⁴⁶ Without joint enablers, however, current Canadian land forces would be unable to achieve overmatch with any potential state adversary force in terms of lethality and protection. The Multi-Domain Battle sees the network that links the joint force at times disrupted, which also means that dispersed elements would not be able to communicate to re-coalesce, but rather could be isolated and destroyed piecemeal.

The draft revised Adapted Dispersed Operations does not address this issue. Resilience is stated as individual soldier mental and physical robustness, mutual respect, injury reduction and an organization's ability to absorb casualties.¹⁴⁷ This is in contrast to the Multi-Domain Battle where "formations must be *resilient* in order to withstand the enemy without Joint Force enablers or domain superiority for periods of time;" resilience is land force self-sufficiency.¹⁴⁸

In the draft document for evolving Adaptive Dispersed Operations, it continues to state under "land power dependencies" the Royal Canadian Air Force's ability to support with "precision strike in low and high threat scenarios" and "close air support and

¹⁴⁶ *Ibid.*

¹⁴⁷ Department of National Defence. *Close Engagement: Land Power in an Age of Uncertainty*, (draft) (n.p., 6 July 2017), 22-23.

¹⁴⁸ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017), 23.

battlefield air interdiction.”¹⁴⁹ This is problematic as air assets may be increasingly tasked to strike in the Deep Fires Area, requiring ground forces to manoeuvre without close air support.¹⁵⁰

The current force structure and Adaptive Dispersed Operations are suited for competition but not the state-level conflict as defined by Multi-Domain Battle. The Canadian Army may state that it can practise full-spectrum operations or a Hybrid War, but the focus is not on the high intensity portion of those models, but rather the low-end stabilization missions.¹⁵¹ Acknowledging this deficit in doctrine and organization will allow the Canadian Army to properly revamp and reorient to a balanced force.

SWOT Analysis: Opportunities

Canada’s geopolitical reality provides its army opportunities that no other country can boast. Due to its good relationship and close proximity to the United States, Canada is in a unique position to practise peacetime integration and cooperation with the American military. Canada has industrial integration with American military industry. Training opportunities are excellent for joint exercises in order to practise incorporating into the new style of American doctrine. In addition, Canada has accessibility to monitor the ongoing American trials on force compositions needed for the Multi-Domain Battle.

¹⁴⁹ Department of National Defence. *Close Engagement: Land Power in an Age of Uncertainty*, (draft) (n.p., 6 July 2017), 26-27.

¹⁵⁰ Department of Defence, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040* (n.p. December, 2017),

¹⁵¹ Michael Byers and Stewart Webb, “Stuck in a Rut: Harper Government Overrides Canadian Army, Insists on Buying Outdated Equipment,” *Canadian Centre for Policy Alternatives* (September 2013), 22.

More importantly, Canada's co-location with the United States creates enough of a deterrent to preclude the threat of ground assault from adversary nations.¹⁵²

Consequently, the Canadian Army has a great deal of freedom in how it wishes to organize itself. The eight Canadian Armed Forces core missions detailed in the Canadian Government's *Strong, Secure and Engaged* provide a roadmap of what the Canadian military must accomplish.

Out of that direction, the core mission to "lead and/or contribute forces to NATO and coalition efforts to deter and defeat adversaries, including terrorists, to support global stability" is most pertinent when considering operating within a Multi-Domain Battle; however, there are many ground aspects to the Multi-Domain Battle and it should be possible to develop a force construct that can balance all core missions with interoperability with the emerging doctrine.¹⁵³ This is not easy as there will always be the tension between having a general purpose force that satisfies the requirement to operate across a range of environments and conflict, vice making long term decisions that maximize a force's equipment and structure to the current threat.

SWOT Analysis: Threats

The importance of a general purpose Canadian Army is underlined by two outside threats that affect it, namely that it does not control long procurement timelines or the nature of the operations upon which it will deploy. Although the military will always have influence in regards to recommendations given to the Canadian Government, the

¹⁵² John J. Noble, "Defending the United States and Canada, in North America and Abroad," *Policy Options* (1 May 2005), <http://policyoptions.irpp.org/magazines/defending-north-america/defending-the-united-states-and-canada-in-north-america-and-abroad/>

¹⁵³ Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy* (Ottawa, Ontario: 2017), 82-83.

political requirements take priority over the military's desires. This is especially the case when there exists powerful political influence from allied nations.

The procurement system is a topic whose implications on the Canadian Military would require several research papers to fully explore. Suffice to say that most commentators on the subject describe the current military procurement system as inefficient, costly and poorly responsive to requirements.¹⁵⁴ The reasons for why this is may or may not be intractable, but the Canadian Army must work within its constraints.

The threat to the land forces is that procuring equipment is a very long process, and that equipment when procured is not easily divested for other platforms.¹⁵⁵ In order to mitigate this risk, the vision of the land force, its doctrine, must inform organization, equipment and employment in order to ensure long-term stability in procurement purchases and a coherent suite of capabilities. Although an army should not be a slave to doctrine, short-term adaptations must take into account and nest into the long-term force employment design.

The Canadian Army may procure a platform that may be specially adapted to an ongoing mission requirement, but have no place in army doctrine or organization. A specific example is that of the Tactical Armoured Patrol Vehicle, which replaced three dissimilar vehicles, the armoured reconnaissance Coyote equipped with a 25mm cannon, and two personnel carriers that could hold up to a section, 8-10 soldiers: the mine-

¹⁵⁴ Canadian Association of Defence and Security Industries, *Improving Canadian Defence Procurement* (November, 2009), 4.

¹⁵⁵ *Ibid.*

resistant ambush protected vehicle, the RG-31, and the armoured personnel carrier the Bison.¹⁵⁶

The Tactical Armoured Patrol Vehicle (TAPV), which is essentially a mine resistant ambush protected vehicle (MRAP) performs admirably in its role as protected mobility countering the improvised explosive threat in a counterinsurgency, but does not fill any general warfighting capability.¹⁵⁷ The Canadian Army is now striving to incorporate this piece of equipment into its arsenal.¹⁵⁸ The armoured regiments will plan on pairing them with LAV 6's, increasing those units sustainment challenges by operating multiple vehicles.¹⁵⁹ The infantry cannot use them as a fighting vehicle as the capacity cannot hold a section or soldiers.¹⁶⁰ Originally destined to become a vehicle for the light forces, the TAPV had the same weight as the LAV III, medium weight vehicle, but due to its large dimensions could not fit into a C-130 as so lacked the strategic mobility of a medium force, let alone a light one.¹⁶¹

The TAPV was a threat-based purchase, designed to defeat IEDs and, in large part, replace the critical operational-requirement procurement of the RG-31 mine-resistant vehicle. Any number of alternative vehicles could have been incorporated within an Adapted Dispersed Operations paradigm, like the ones that the British and Australian purchased, but now the army is left with 500 vehicles that it is not certain how to use.

¹⁵⁶ Canada. 7050-11-41. *Internal Audit: Tactical Armoured Patrol Vehicle (TAPV)*, November 2011, p 3. http://www.forces.gc.ca/assets/FORCES_Internet/docs/en/about-reports-pubs-audit-eval/P0951-eng.pdf

¹⁵⁷ Gregory Dunn, "Outdated Armies: The Impact of Technology on Military Readiness," *Harvard International Review*, (24 February 2014). <http://hir.harvard.edu/article/?a=3220>.

¹⁵⁸ Chris Thatcher, "Defining the TAPV," *Canadian Army Today* (5 December 2017). <https://canadianarmytoday.com/defining-the-tapv/>

¹⁵⁹ E.A. Kerckhoff, "A Force Employment Framework for TAPV" (Joint Command and Staff College Paper, Canadian Forces College, 2016), 2.

¹⁶⁰ Chris Thatcher, "Defining the TAPV," *Canadian Army Today* (5 December 2017). <https://canadianarmytoday.com/defining-the-tapv/>

¹⁶¹ *Ibid.*

A future conflict may not have a long preparation time for re-tooling and retraining the army, as was given to it during the Second World War.¹⁶² Political pressure could still force the Canadian Army to commit to combat operations prior to being realigned from its specialization in stabilization operations. Although the Canadian Army may not require the most up-to-date equipment or in massive numbers, it does need to use and understand the full suite of brigade capabilities required in future wars if it wishes to effectively operate.

Equipment is relatively easily and quickly acquired when a clear threat is present (C17 and CH147 acquisition), but the training of a capability and leadership understanding of that capability's employment often requires years. Credibility in the professionalism and ability to manage land force requirements could be degraded should the Canadian Army be unable to meaningfully commit forces once called upon by a coalition to enter state-on-state conflict, despite the resources allocated to the Department of National Defence and public assurances that it is combat capable.¹⁶³

The Canadian Army does not control the operations that the Canadian Government chooses to commit it to and so it must satisfy requirements across the spectrum of conflict and maintain interoperability with its closest allies. The Canadian Airborne Regiment brings certain lessons of this to the forefront. Its example is a case of the Canadian Army declaring a unit fit for a specific mission, but which instead failed to achieve the political goals of the government.

¹⁶² J.L. Granatstein, *Canada's Army: Waging War and Keeping the Peace* (Toronto, Ontario: University of Toronto Press, 2002), 176.

¹⁶³ “[the army has] a critical mass of troops on the ground, to prevail in the most difficult circumstances – combat with an advanced adversary.” Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy* (Ottawa, Ontario: 2017), 36.

The Canadian Airborne Regiment was declared fit for a specific mission for which it was ill-prepared and equipped, consequently leading to it embarrass the Canadian Government. Although the unit had significant leadership problems, a key failing was also that it had trained, equipped and maintained a mindset for a different style of conflict than what for which it was employed.¹⁶⁴ There was no doctrine written for peacekeeping at that time, and instead the force was trained for cold war operations.¹⁶⁵ The soldiers adapted at a tactical level and did achieve many good things on their deployment, but the failure that became known as the Somalia Affair overshadowed all other actions.¹⁶⁶ The Regiment was dishonoured and disbanded, the Canadian Military professionalism called into question.¹⁶⁷

The improper training uncovered in the Somalia Affair references the belief at the time that conventional warfighting training would be sufficient for stability operations.¹⁶⁸ Viewed narrowly, the lesson can be that conventional combat training is not enough for stability operations, and this is true. More broadly, however, is the lesson that the Canadian Army has to be able to accomplish all of the land components in Canadian Armed Forces' core missions, not pick the missions or styles of combat that are in vogue. The Canadian Army is currently being employed as a forward presence force under NATO to deter Russian state aggression.¹⁶⁹ One can imagine that the negative reaction of

¹⁶⁴ Commission of Inquiry into the Deployment of Canadian Forces to Somalia, *Dishonoured Legacy: The Lessons of the Somalia Affair* (Ottawa: Canadian Government Pub., 1997), 713.

¹⁶⁵ *Ibid.*

¹⁶⁶ Grant Dawson, *Here is Hell: Canada's Engagement in Somalia* (Vancouver, BC: UBC Press, 2007), 73.

¹⁶⁷ Jack L. Granatstein, *Canada's Army: Waging War and Keeping the Peace* (Toronto: University of Toronto Press, 2002), 407.

¹⁶⁸ Peter Kasurak, *A National Force: The Evolution of Canada's Army, 1950-2000* (Vancouver: UBC Press, 2013), 247.

¹⁶⁹ National Defence and the Canadian Armed Forces, "Operation *Reassurance*," last modified 23 April 2018, www.forces.gc.ca/en/operations-abroad/nato-ee.page.

the Canadian public should the Canadian Forces enter a conflict in the Baltics without the doctrine, equipment or mindset for that task.

6. CONCLUSION

This paper has attempted to shed light on the links and implications of American operational level doctrine on that of the Canadian Army. The current paradigm for Western coalition warfighting is heavily influenced by the Air-Land Battle, which inculcated the operational level into American doctrine and saw the rise of the joint force. Canada, though maintaining a separate tradition and concepts than those of the United States, borrows heavily from their neighbours to the South. The Canadian Army's doctrine, even if not explicitly nested into that of the American, places a particular focus on interoperability with the United States Military.¹⁷⁰

The interoperability is of special importance as Canadian land forces are most often employed within an American led coalition, or a coalition heavily influenced by American methods. This requirement for interoperability leads tacitly to Canada nesting its tactical doctrine within that of American operational level doctrine.

As the world faces a return of potential state adversaries, especially ones who blend irregular and regular styles of warfare and have access to the latest in technology, the United States' land forces are evolving its concept. The new operational level doctrine, the Multi-Domain Battle acknowledges that all domains will be contested in future conflicts and puts a premium on resilient elements able to converge their effects without relying on having constant integration of their effects. This resilience requires

¹⁷⁰ Department of National Defence, B-GL-005-000/FP-001, *Canadian Military Doctrine* (Ottawa, Ontario: DND Canada, 2011), 1-4.

self-contained elements able to defend and attack with their organic assets, relinquishing the efficiency of having a stripped-down organization able to depend on joint effects.

The Canadian Adaptive Dispersed Operations detailed in *Land Operations 2021* is an indirect product of the Air-Land Battle. Its network centric, joint model contains several assumptions that are no longer valid when operating under the Multi-Domain Battle. The Canadian Army must evolve to keep pace with its allies, but this evolution must be well considered and holistic, not a fragmented approach that opens capability gaps that leave us irreconcilable to coalition integration.

The strengths and opportunities of the Canadian Army are numerous. The access afforded by location to the United States means that Canada's soldiers and officers have unprecedented access to the ongoing theoretical and practical developments within the world's superpower. The Canadian Army possesses quality, educated people who can leverage that access to ensure that Canada's land force is operating at the leading edge. There is much in the way of freedom in developing that leading edge force as no imminent ground threats dictate what force it must be. Yet a holistic and coherent force has to be developed as a fragmentary ad hoc approach to force development will leave the Canadian Army saddled long-term with fragmented capabilities and inappropriate equipment. Consequently, the Canadian Army would be consigned to deploying small, low impact forces that would fail to provide the meaningful coalition contribution that the Canadian Government needs to achieve its political aims.

Multi-Domain Battle is an attempt at a comprehensive doctrine encompassing all domains, conflicts and competition. Informing Canadian Army doctrine with that of the Multi-Domain Battle would not replace the stabilization or peacekeeping doctrine or

experience that it spent so long to acquire, but rather incorporate it a response to state-on-state conflict and emerging trends.

The purpose of this paper is a call more effective use of resources, unified through well considered doctrine. State and non-state adversaries are increasingly lethal. Although Canadian land forces will most likely continue to deploy in a coalition environment, how they work in that coalition is changing. The Canadian Army has become dependent on the Royal Canadian Air Force to permit its manoeuvre, where instead it needs to be self-sufficient and integrated with all domains. In a future where all domains are contested, the land force will need to support in addition to being supported.

These future long-term trends are today's reality, and the Canadian Army needs to smartly and systematically re-design itself if it is to avoid becoming a hollow force. The threat of an existential conventional ground war for Canada may be low, but the risk of a Hybrid conflict utilizing conventional ground forces is a definite possibility. A possibility that would risk the Canadian military's core interests of global stability and Canada's relationship with its largest ally should it be unable to provide a meaningful contribution.¹⁷¹ The Canadian Army has a large part to play in that contribution, and the forces that it generates must be able to readily incorporate with the one country with which its security is intimately tied, the United States of America. At present, that interoperability and meaningful contribution requires the Canadian Army to evolve its structures and doctrine to the implications of the Multi-Domain Battle.

¹⁷¹ Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy* (Ottawa, Ontario: 2017), 82.

BIBLIOGRAPHY

- Bonds, Timothy et al. "What Role Can Land-Based, Multi-Domain Anti-Access/Area Denial Forces Play in Deterring or Defeating Aggression?" USA: Rand Corporation, 2017. www.rand.org/t/RR1820.
- Brown, Robert B. and David G. Perkins. "Multi-Domain Battle: Tonight, Tomorrow, and the Future Fight." *War on the Rocks*, 18 August 2017, <https://warontherocks.com/2017/08/multi-domain-battle-tonight-tomorrow-and-the-future-fight/>.
- Bronfeld, Saul. "Did TRADOC Outmanoeuvre the Manoeuvrists? A Comment." *War & Society*, Volume 27, Number 2. October, 2008. 111-125. <https://www.tandfonline.com/doi/abs/10.1179/war.2008.27.2.111>.
- Byers, Michael and Stewart Webb. "Stuck in a Rut: Harper Government Overrides Canadian Army, Insists on Buying Outdated Equipment." *Canadian Centre for Policy Alternatives* (September 2013).
- Canada. Department of National Defence. B-GL-005-000/FP-001, *Canadian Military Doctrine*. Ottawa, Ontario: DND Canada, 2011.
- Canada. Department of National Defence. B-GL-007-000/JP-007. *Canada's Future Army, Volume 1: Methodology, Perspectives and Approaches*. Kingston: Army Publishing, 2015.
- Canada. Department of National Defence. B-GL-007-000/JP-009. *Canada's Future Army, Volume 2: Force Employment Implications*. Kingston: Army Publishing, 2017.
- Canada. Department of National Defence. B-GL-300-000/AG-001. *Designing Canada's Army of Tomorrow*. Kingston: Army Publishing, 2011.
- Canada. Department of National Defence. B-GI-310-001/AG-001, *Land Operations 2021: The Force Employment Concept for Canada's Army of Tomorrow*. Kingston: Army Publishing, 2007.
- Canada. Department of National Defence. B-GL-005-000/AC-001. *Advancing with Purpose: The Army Strategy*. n.p. 2014.
- Canada. Department of National Defence. B-GL-300-000/FP-000. *Canada's Army: We Stand on Guard for Thee*. n.p. 1998.
- Canada. Department of National Defence. B-GL-321-001/FP-001. *Land Force Multinational Corps Operations – Corps Operations*. n.p. 1998.

- Canada. Department of National Defence. B-GL-300-001/FP-001. *Land Operations*. n.p. 2008.
- Canada. Department of National Defence. *Strong, Secure, Engaged: Canada's Defence Policy*. Ottawa, Ontario: 2017.
- Canada. Department of National Defence. B-GL-300-000/AG-003. *Waypoint 2018: The Canadian Army Advancing Toward Land Operations 2021*. Kingston: Army Publishing, 2015.
- Canada. House of Commons. Standing Committee on National Defence. *Canadian Forces in Afghanistan*, 39th Parliament, 1st Session, June 2007.
<http://www.ourcommons.ca/Content/Committee/391/NDDN/Reports/RP3034719/nddnrp01/nddnrp01-e.pdf>
- Canada. Commission of Inquiry into the Deployment of Canadian Forces to Somalia. *Dishonoured Legacy: The Lessons of the Somalia Affair*. Ottawa: Canadian Government Pub, 1997.
- Coombs, Harold. *Canadian Whole-of-Government Operations in Kandahar*. Ottawa, Ontario: Conference of Defence Associations Institute, 2012. https://cdainstitute.ca/wp-content/uploads/2012/06/CDAInstitute_WOG_Dec2012.pdf
- Canadian Association of Defence and Security Industries. *Improving Canadian Defence Procurement*. November, 2009. <https://www.defenceandsecurity.ca/UserFiles/File/IE/Annex%20E%20-%20Consultation%20Summary.pdf>
- Coman, Alex and Boaz Ronen. "Focused SWOT: diagnosing critical strengths and weaknesses." *International Journal of Production Research* vol. 47, no.20 (13 October 2009): 5677-5689.
- Dawson, Grant. *Here is Hell: Canada's Engagement in Somalia*. Vancouver, BC: UBC Press, 2007.
- Dunn, Gregory. "Outdated Armies: The Impact of Technology on Military Readiness." *Harvard International Review*. 24 February 2014. <http://hir.harvard.edu/article/?a=3220>
- English, Allan. "The Operational Art: Theory, Practice, and Implications for the Future." *Operational Art: Canadian Perspectives: Context and Concepts*, edited by Allan English, Daniel Gosselin, Howard Coombs, and Laurence M. Hickey, 1-74. Kingston, Ontario: Canadian Defence Academy Press, 2005.
- Freeland, Chrystia. Speech, "Canada's Foreign Policy Priorities." Global Affairs Canada, Ottawa, Canada, 6 June 2017. https://www.canada.ca/en/global-affairs/news/2017/06/address_by_ministerfreelandoncanadasforeignpolicypriorities.html

- Granatstein, J.L. *Canada's Army: Waging War and Keeping the Peace*. Toronto, Ontario: University of Toronto Press, 2002.
- Helms, Marilyn M. and Judy Nixon. "Exploring SWOT analysis – where are we now? A review of academic research from the last decade," *Journal of Strategy and Management*, Vol. 3, Iss. 3 (2010): 215 – 251.
- Isserson, Georgii Samoilovich. *The Evolution of Operational Art*. Translated by Bruce W. Menning. Fort Leavenworth, Kansas: Combat Studies Institute Press, 2013.
- Jackson, Aaron P. *The Roots of Military Doctrine: Change and Continuity in Understanding the Practice of Warfare*. Fort Leavenworth, Kansas: Combat Studies Institute Press, 2013.
- Karber, Phillip and Joshua Thibeault. "Russia's New Generation Warfare" The Potomac Foundation, 2016. Accessed November 2017.
<http://www.thepotomacfoundation.org/russias-new-generation-warfare-2/>
- Kasurak, Peter. *A National Force: The Evolution of Canada's Army, 1950-2000*. Vancouver: UBC Press, 2013.
- Kerckhoff, E.A. "A Force Employment Framework for TAPV." Joint Command and Staff College Paper, Canadian Forces College, 2016.
- Long, Jeffrey W. "The Evolution of U.S. Army Doctrine: From Active Defence to Airland Battle and Beyond," Master's thesis, U.S. Army Command and General Staff College. 1991.
- McAndrew, William. "Operational Art and the Canadian Army's Way of War." In *The Operational Art: Developments in the Theories of War*, edited by B.J.C. McKercher and Michael A. Hennessy, 87-102. Westport, Connecticut: Praeger Publishers, 1996.
- National Defence and the Canadian Armed Forces. "Operation *Reassurance*." last modified 23 April 2018. www.forces.gc.ca/en/operations-abroad/nato-ee.page.
- Newell, Clayton R. "On Operational Art." *On Operational Art*, edited by Clayton R. Newell and Michael D. Krause. Washington: U.S. Government Printing Office, 1994. 9-16. https://history.army.mil/html/books/070/70-54/cmhPub_70-54.pdf
- Noble, John J. "Defending the United States and Canada, in North America and Abroad." *Policy Options* (1 May 2005), <http://policyoptions.irpp.org/magazines/defending-north-america/defending-the-united-states-and-canada-in-north-america-and-abroad/>

- Ochmanek, David, Peter A. Wilson, Brenna Allen, John Speed Meyers, and Carter C. Price. *U.S. Military Capabilities and Forces for a Dangerous World: Rethinking the U.S. Approach to Force Planning*. Santa Monica, California: RAND Corporation, 2017.
- Park, Jungwee. "A profile of the Canadian Forces." *Statistics Canada* (July 2008).
<http://www.statcan.gc.ca/pub/75-001-x/2008107/pdf/10657-eng.pdf>.
- Perkins, David G. "Multi-Domain Battle: Driving Change to Win in the Future." *Military Review*. (July-August 2017): 6-12.
- Perkins, David G. "Preparing for the Fight Tonight Multi-Domain Battle and Field Manual 3-0." Tradoc News Center. Accessed 5 Sep 2017.
<http://tradocnews.org/preparing-for-the-fight-tonight-multi-domain-battle-and-field-manual-3-0/>
- Robbins, James S. *This Time We Win: Revisiting The Tet Offensive*. New York: Encounter Books, 2012.
- Simms, James. "Keeping the Operational Art Relevant for Canada: A Functional Approach." *Operational Art: Canadian Perspectives: Context and Concepts*, edited by Allan English, Daniel Gosselin, Howard Coombs, and Laurence M. Hickey, 293-312. Kingston, Ontario: Canadian Defence Academy Press, 2005.
- Skinner, Douglas W. "Airland Battle Doctrine." *Center for Naval Analyses*, Professional Paper 463 (September 1988) <http://www.dtic.mil/dtic/tr/fulltext/u2/a202888.pdf>
- Svechin, Aleksandr A. *Strategy*, edited and translated by Kent D. Lee. Minneapolis, Minnesota: East View Information Services, 2004.
- Swain, Richard M. "Filling the Void: The Operational Art and the U.S. Army." *The Operational Art: Developments in the Theories of War*, edited by B.J.C. McKercher and Michael A. Hennessy. Westport, Connecticut: Praeger Publishing, 1996. 147-172.
- Thatcher, Chris. "Defining the TAPV." *Canadian Army Today*. 5 December 2017.
<https://canadianarmytoday.com/defining-the-tapv/>
- United States. Joint Chiefs of Staff, *Joint Operations*, JP 3-0 (n.p. 17 January 2017).
http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_0_20170117.pdf
- United States. Department of Defence. *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040*. n.p. December, 2017.
http://www.tradoc.army.mil/MultiDomainBattle/docs/MDB_Evolutionfor21st.pdf

United States. TRADOC. *White Paper: Multi-Domain Battle: Combined Arms for the 21st Century*. n.p. 24 February 2017.

Vance, J.H. "Tactics Without Strategy or Why The Canadian Forces So Not Campaign." *Operational Art: Canadian Perspectives: Context and Concepts*, edited by Allan English, Daniel Gosselin, Howard Coombs, and Laurence M. Hickey, 271-291. Kingston, Ontario: Canadian Defence Academy Press, 2005.

Vick, Alan, David Orletsky, Bruce Pirnie and Seth Jones. *The Stryker Brigade Combat Team: Rethinking Strategic Responsiveness and Assessing Deployment Options*. Santa Monica, California: RAND Corporation, 2002.

Willbanks, James H. *The Tet Offensive: A Concise History*. New York: Columbia University Press, 2007.

Wilson, Ward. "The Myth of Nuclear Deterrence." *Nonproliferation Review*, vol. 15, no. 3 November 2008, 421-439. https://www.nonproliferation.org/wp-content/uploads/npr/153_wilson.pdf.

Woody, Christopher. "Watch the Army test upgraded armor vehicles meant to counter increased Russian firepower." *Business Insider* (17 August 2017). <http://www.businessinsider.com/watch-the-army-stryker-cannon-and-missile-upgrades-2017-8>