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Relevancy for the Future Battlespace

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Solo Flight

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RELEVANCY FOR THE FUTURE BATTLESPACE

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RELEVANCY FOR THE FUTURE BATTLESPACE

An organization, large or small, unable to transform based on the operating environment and more importantly the future environment, will be doomed for failure.¹ Transformation is an interesting topic, especially when applied to the Canadian Armed Forces (CAF) as transformation has not been easy for the CAF to implement and sustain. This is an interesting statement as CAF leaders are trained to support, manage and implement one of the more fundamental skills required by modern leaders, change management.² In order to maintain relevancy and ensure success in all types of missions, an organization, especially one as large as the CAF needs to modernize as the threats and opposing forces modernize. Analyzing and understanding the future securities environment is the main area that is used to build on the type of force required to meet those challenges. The nature, location, and type of warfare in near future will require forces and commanders to be able to operate in the pan-domain.³ The rise of megacities by 2050 will determine the area of operations (AO) as opposed to the open planes of Europe and the Fulda Gap.⁴ Single domain dominance will not be the requirement to win, but the one who can operate in cyber, space, targeting, conduct information operations, and understand the social media will win in the future. In addition a nation that can exploit the use of artificial intelligence (AI), robotics, to enable manoeuvre on a globally connected battlefield will have the advantage.⁵ Commanders will also be overwhelmed by the amount of information that is

¹ John Kotter, "Leading Change: Why Transformation Efforts Fail", *Harvard Business Review*, (1995), Leading Change: Why Transformation Efforts Fail (hbr.org), last accessed 2021

² Martin Yelle, Martin Lauzier, "Getting Ready to change: What leaders can do to foster change readiness. Overcoming Leadership Challenges," *Canadian Defence Academy Press*, (Winnipeg, 2015), 144

³ Canada, "Pan-Domain Force Employment Concept," *National Defence*, (Canada, 2020), 26

⁴ "TRADOC Mad Scientist 2018 Megacities: 1.07 The Warfighter & Megacities — USARPAC/GEN Brown." *YouTube video*, (12 April 2018). Access at <https://www.youtube.com/watch?v=bJD2ORr0VVA>

⁵ Andres, Richard. "Emerging Critical Information Technology and Great Power Competition. In *Strategic Assessment 2020: Into a New Era of Great Power Competition*," *Washington: Institute for National Strategic Studies*, (National Defense University, 2020), 141-143

available and will need to automate certain decisions. This paper will establish that the CAF, more specifically the Army is not prepared to train, fight and win in the future securities environment until a fundamental transformation is implemented to create a credible joint force for the pan-domain fight.

While this paper will touch on the CAF writ-large and the future securities environment, the emphases will be placed on the Canadian Mechanized Brigade Group (CMBG) as the lowest tactical formation that the CAF and more specifically the Canadian Army will deploy on operations.⁶ Part one of this paper will introduce prior transformation attempts of the CAF. It will briefly discuss amalgamation by Minister Hellyer and attempts by General Hillier to modernize the force. Part two will conduct a deep dive into possible threats and the future AO that the CAF will be operating in. Part three will be an analysis of the (CMBG). Is it the correct force package for future operations? Is there enough joint and integrated training that is taking place to enable mission success? Part four will be a discussion on other military formations that have changed or were formed to meet the needs of the future, and what could a Canadian hybrid joint structure meet the needs of the future.

TRANSFORMATION

Transformation of the CAF seems to be an area that has been difficult to accomplish when not faced with an imminent threat. Since the ending of the Cold War and anti-terrorist operations in Afghanistan, there is currently no threat that would necessitate the force to change. When Minister Hellyer forced change upon the CAF it was done to increase the operational

⁶ Canada, A-PP-106-000/AF-001, "Advancing With Purpose," *Canadian Army*, (Ontario, 2020),31

output and reduce administration inefficiency.⁷ This was met with resistance from the senior leadership and the Minister forced the reforms onto the Institution. General Hillier wanted to transform the CAF to be a more effective, relevant, and responsive organization that could provide leadership at home and abroad by integrated the three services and Special Forces.⁸ Looking at both of these initiatives, one of the main tenants was the integration of forces to increase the effectiveness of the output. Over time transformation that was started by each individual only had the power to be sustained while those members were in power. Once departed, and no real threat to force the change, changes were reversed or modified. The parts that remained with these transformation initiatives are ones that were forced around headquarters and command structures of forces,⁹ however a look at transforming tactical capability to achieve mission success is required.

The CAF has undergone various changes or transformation initiatives since the end of the Second World War.¹⁰ This begs the question, is there an issue with how the transformation is introduced, by only focusing on one person's idea but should include a larger group inside the institution? There is an apparent force that changes are maintained only when the person who makes the change remains in power. Over time their change initiative is either modified or cancelled, by institutional forces who are resistant to change.¹¹ This is apparent in a large organization as the resistance to change is more powerful after the leader has moved on and / or

⁷ Devin Conley, Eric Ouellet, "The Canadian Forces and Military Transformation an elusive quest for efficiency," *The Canadian Army Journal*, (National Defense, Spring 2012) ,72-72

⁸ Ibid, 78-79

⁹ Canada, "Report on Transformation," *Government of Canada*, (Ottawa,2011), <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/report-on-transformation-2011.html>

¹⁰ Allen English, "Outside CF Transformation Looking In," *Canadian Military Journal*, Canada, (spring 2011),17

¹¹ John Kotter, "Leading Change: Why Transformation Efforts Fail", *Harvard Business Review*, (May-June 1995)

the institutional resistance from both serving and former serving members is large and has a direct impact to change. The other force that does not take change well is the Regimental system.

The Regimental system has been a success for the Forces as it allows recruits to join, train, learn their history and traditions and become proficient in their primary function.¹² This system has been identified by numerous leaders as the keystone organization of the Army.¹³ However, a downfall to the Regimental system is the stove-piping into one way of combat for a majority of personnel.¹⁴ The Regiment does not expose members to other concepts of enablers and war fighters until late in their careers and they might not fully understand the threats in the future battle space and how to operate in a larger force. Focusing on the CMBG and while it has changed over time with additional enablers, the make-up of the Canadian Brigade has not changed since the cold war. Infantry, Armored, and Artillery with logistical support and specialties operate today in a manner consistent to when the threat was the Soviet Union, North Korea, and the Germans in the Second World War. However, the enablers, exemplified by information operations and electronic warfare, operate in their domain with minimal opportunity to train with other capabilities in different domains. The Regimental system has allowed for the success in the last war and from all accounts the war that we train for, but it does not prepare us for the future war integrating into a large joint force that sees threats in all domains that effects soldiers at all levels.

¹² Canada, B-GL-300-000FP-000, "Canada's Army", *National Defense* (Ottawa 1998), 37, 43-44

¹³ Jocelyn Paul, Maj, "The Regiments and the Canadian Army of Tomorrow," *USMC School of Advanced Warfighting*, (ANSI, 2005), p6

¹⁴ Having spent a large majority of time within the Regimental system, there are not a lot of opportunities when officers and soldiers train, work, and operate with other arms, unless part of the Managed Readiness plan or on operations.

Transformation is a difficult process, especially when there is no perceived threat to the forces of the nation. While the previous transformation has been successful in the short term, while creating a better command and control structure, there needs to be more of a revolution to how the forces fight and will fight in the pan-domain in order to be a relevant combat force. A mix of capabilities, structure and approach will align the doctrine and training to meet the needs of the future operating environment.¹⁵

Threats and the Future Operating Environment

In the future security environment, operations either at the CMBG or lower echelons will have a wide array of information that will be flowing into their headquarters to aid in the decision-making process.¹⁶ This will affect Commanders as they will be saturated with abundant information. Without the proper training and resources, commanders will not be able to make timely and accurate decisions. The battle to own the information space, which is connected more and more with infrastructure, defense, space, and social media will make the battlefield larger than what our current commander knows or even understands based on the force structure, training, and composition of the Force.¹⁷ 5G network, quantum computers, artificial intelligence (AI), and internet will need to be understood and integrated into the planning.¹⁸ Additionally, capabilities to deal with long-range strikes, modernized nuclear capability, robots, advanced

¹⁵ Mike Rouleau, LGen, "How we Fight: Commander CJOC Thoughts", *CJOC*, (Canada, February 2019), 1-2

¹⁶ Canada, "Close Engagement: Land Power in an Age of Uncertainty," *Canadian Army Land Warfare Center*, (Kingston, Ontario, 2019), 26

¹⁷ Andres, Richard. "Emerging Critical Information Technology and Great Power Competition. In *Strategic Assessment 2020: Into a New Era of Great Power Competition*," *Washington: Institute for National Strategic Studies*, (National Defense University, 2020), 141-143

¹⁸ Podcast, "How Will Technology Change Future Wars." *Modern War Institute at West Point*, 14 December 2018. Access at: <https://mwi.usma.edu/mwi-podcast-will-technology-change-future-wars>

electronic warfare, coupled with the lower costs of these capabilities¹⁹ makes even the smallest of threat a larger one if a Force cannot operate in all domains as a singular entity.

With the increase of these threats and systems, the terrain that will more than likely be fought in will not be open terrain that favors manoeuver on a large scale, but terrain that is less talked about and even less trained on, that is fighting in the urban areas. Seventy percent of the population of the world by 2050 will be living in cities and cities that are close to water and ports.²⁰ However, the world population transition to cities is happening now, and forces can expect that the future operating environment will be in dense urban areas. These areas will be over ten million people,²¹ and if a Force is not been trained to operate in those areas, that the Force will not be set up for success. Threats will be even more complex in these areas which will require the right equipment, force composition, training, and leaders. Leaders will have to deal with non-combatants, civilian and political actors to non-state actors with gangs and armed terrorist groups.²² Communicable diseases and unsanitary areas, brought about by lack of clean water and proper sewage places additional challenges for forces operating in these areas to deal with.²³ Additional threats could come from cyberspace disrupting the economy and trade to sow dissent.²⁴ Identification of the threats within these cities, both strategic and tactical will be key to enabling force composition with the necessary medical and logistical support.

¹⁹ Michael Hutchens, William Dries, Jason Perdew, Vincent Byant, Kerry Moores, "Joint Concept for Access and Maneuver in the Global Commons," *Joint Forces Quarterly* 84, (Washington, 2017), 135

²⁰ Christopher Bowers, Maj, "Future Megacity Operations – Lessons from Sadr City", *Military Review*, (2015),9

²¹ David Betz and Stanford-Tuck, Hugo. "The City is Neutral: On Urban Warfare in the 21st Century." *Texas National Security Review* 2 4, (October, 2019)

²² Sampaio, Antonio. "Before and after urban warfare: Conflict prevention and transitions in cities." *International Review of the Red Cross* 98, no. 1 (2016), p71-72

²³ Bowers, Christopher Maj, "Future Megacity Operations – Lessons from Sadr City", *Military Review*, (2015),10

²⁴ Lawton, Joel, Matthew Santaspirt, and Michael Crites. "Army Operations in Megacities and Dense Urban Areas: A Mad Scientist Perspective." *Military Intelligence Professional Bulletin* 42, no. 3 (July 2016),12

The not-so-far future operating environment that has the most potential to be most active is operating in a dense urban area (DUA) based on the movement of populations to cities. A commander, planning this type of operation, might have three or more different missions engaging at the same time with a different set of rules of engagement. A direct-action operation, warfighting, humanitarian, peacekeeping, and policing, along with a training mission could all be ongoing in a DUA. These missions would provide the headquarters information from all domains that need to be integrated to prepare for the next threat. The anti-access aerial denial (A2AD) warfare that is currently employed by our adversaries will make it very difficult to defeat that threat to set up operations in DUA.²⁵ Additionally being able to conduct cyber warfare would affect the real world much like the many malware attacks that proved that events in cyberspace can have a real effect on critical infrastructure.²⁶ No longer will a coalition need only military hardware and personnel to conduct operations, but also civilian and governmental forces to understand civilian infrastructure that will be a critical component of the battlespace.²⁷ Changes to the equipment such as the propulsion system of rockets and planes will affect the speed of deployment and affect the outcome of an operation.²⁸ As Russia and China continue to improve on the Hypersonic Weapons as well as smarter and cheap technologies, such as drones and other swarm style systems, they will greatly modify the battlespace and make it more difficult to plan

²⁵ Grant Newsham, "Exploiting Amphibious Operations to Counter Chinese A2/AD Capabilities," *Center for a New American Security*, (Washington, 2016), 2,3

²⁶ Andres, Richard. "Emerging Critical Information Technology and Great Power Competition." In *Strategic Assessment 2020: Into a New Era of Great Power Competition*. Washington: *Institute for National Strategic Studies*, (National Defense University, 2020), 143

²⁷ William Davis Jr, "Why We Keep Getting it Wrong: What makes the JIIM so Different," *Center for Interagency Cooperation*, (Kansas, 2017), 48-50

²⁸ Lucian Ștefan. "Unconventional Technologies in the Modern Warfare: Weapons, Concealment/Camouflage Systems, Means of Transportation." *Strategic Impact* 55, no. 2 (April 2015), 93

for and defend against. As these systems become cheaper, CAF force will need to be able to defend and attack.

The future operating environment will require forces to be effective in the pan-domain fight.²⁹ Historically and currently for the CAF, forces can operate and some can dominate in one domain, for example, the land or air, but future forces will have space, cyber, and more robust EW forces that will need to be addressed. Forces must be agile enough to be able to combat threats that are operating below the threshold of state-on state conflict and using more non-state actors who are capable of using cyber and space domains to further their efforts.³⁰ The simplistic binary thinking and planning that shaped operations in the past cannot be done in the pan-domain.³¹ With the proliferation in technology and cyberspace, space, and other domains, can the CMBG as it is structured, be robust and equipped for the pan-domain fight?

The CMBG

The structure of the CMBG is designed to enable it to operate in the land domain with hard power. The tenant of brigade operations is the manoeuvre approach to warfighting.³² However, when analyzing the rest of the doctrine to this approach it is clear that the CMBG can only operate in one domain as there is no discussion on cyber, space, and other advances. In Advancing with Purpose the CMBG is the center of the joint force will focus closing with and destroying the enemy with Infantry Armored and Artillery with Air force support as required.³³ The CMBG as structured to have a complement of infantry and armored Units with

²⁹ Canada, “Pan-Domain Force Employment Concept,” *National Defence*, (Canada, 2020),15

³⁰ Mike Rouleau, LGen, “How we Fight: Commander CJOC Thoughts”, *CJOC, Canada* (February 2019), 4-5

³¹ Canada, “Pan-Domain Force Employment Concept,” *National Defence*, (Canada,2020),4

³² Canada, B-GL-321-003/FP-001, “Brigade Tactics”, *National Defence*, (Ottawa, 2017), 1-3/ 1-5

³³ Canada. HQ, Canadian Army. “Advancing With Purpose: The Canadian Army Modernization Strategy”, *4th Edition. Ottawa, ON:* (December 2020),1

reconnaissance and fire support, having a flexible origination that can be tailored to meet the threat that it is equipped to handle.³⁴ However, there are a few areas where the CMBG is deficient in the pan-domain that make it unable to meet the threat. These areas are cyber warfare, space, artificial intelligence, as well as operating in megacities that are next to ports will have a direct impact on the CMBG.³⁵ In addition, the joint aspect that is talked about in Close Engagement and Advancing with Purpose is not trained efficiently less than once a year during validation.³⁶

While the doctrine notes and future analysis both in Advancing with Purpose and Pan-Domain fight, speak to the joint requirement of a force packages to meet the needs of the future battle space, the current structure of the CMBG, as well as the training cycle of the units within a Regimental construct, does not lend itself well to joint training and integration, outside of a Head-Quarters. While the creation of an enabler's group in the Canadian Combat Support Brigade (CCSB) allows for discrete enablers such as Electronic Warfare (EW), Information Operations and activities, (IO/IA) to be given to the CMBG, there is only command and control structure change. Trust is built up over time, and units that work, train, and conduct operations daily would excel in an extreme situation as trust would have been solidified.

Joint Force and Canadian Joint Capability

Identifying a force package that would enable mission success in pan-domain operations is not difficult to find when looking for examples. The United States Marine Corps has the size and budget to meet any operational environment, however, it is not a good comparison to a

³⁴ Canada, B-GL-321-003/FP-001, "Brigade Tactics," *National Defence*, (Ottawa, 2017), 1-12/1-15

³⁵ This is based on the authors experience conducting and planning operations at the Brigade level, both in the G5 and G3 sections at the Head Quarters.

³⁶ The current Managed Readiness Plan sees that one CMBG per year will conduct validation training during the Exercise of Maple Resolve.

smaller force. This is due to how USMC is recruited, trained, and grown within a fighting formation whose emphasis is solely joint, interoperable, and capable of adding a myriad of enablers as they are all Marines first.³⁷ Looking closer to a force that is more comparable and specific to the Canadian Army and the CAF is Australian Defense Force (ADF). The ADF started on the to modernization that will enable it to have joint and ready forces similar to a USMC Marine Air Ground Task Force (MAGTF) with the 2 Royal Australian Regiment Amphibious capabilities.

At the end of the 1990s, the ADF recognized from their mission in East Timor that their forces were ill-prepared to meet the challenges posed by operating and sustaining forces in a littoral setting type of conflict.³⁸ In 2000 they embarked on a whole of government approach to equip, train maintain and sustain forces that could operate with all the joint enablers.³⁹ In 2011, the ADF transformed their 2nd Royal Australian Regiment (2 RAR) into an amphibious joint capability based on the past.⁴⁰ This force comprises joint air, land, and sea elements that are capable of operating and sustaining operations in littoral and other environments. In 2016, recognizing the threats that were posed in the emerging domains, such as cyber, space, and EW, the ADF embarked on acquiring additional space surveillance and situational awareness capability while building their EW, ISR enhanced interoperability with the United States.⁴¹ Over time this capability has become more and more entrenched within their forces.

³⁷ David Berger, General. "Commandant's Planning Guidance", *United States Marine Corps*, (July 2019), 1,2

³⁸ Alan Dupont, "Transformation or Stagnation? Rethinking Australia's Defence," *Australian Journal of International Affairs*, vol57-1, (2003) ,59

³⁹ Kim Gilfillan, Colonel, "Force from the sea: Australia's Amphibious Capability – An Update." *United Services Institute*, (December 2019), 12

⁴⁰ Megan Eckstein, "Australia's Amphibious Force Nearing Full Operational Capability," *USNI*, Annapolis, MD, (October,2017), <https://news.usni.org/2017/10/05/australias-amphibious-force-nearing-full-operational-capability> last accessed May 2021

⁴¹ Peter Jennings, "The 2016 Defence White Paper and the ANZUS Alliance", *JSTRO, Institute for Regional Security* (2016),56

In the USMC, a Marine Expeditionary Brigade (MEB) consists of fourteen to seventeen thousand Marines, with a Marine Expeditionary Unit consisting of approximately twenty-two thousand soldiers and a MAGTF consisting of the number of forces required.⁴² Each has its number of days of sustainability between fifteen and sixty. These forces have the required enablers from Naval, air, rotary-wing, to infantry, armored artillery, and engineers all working in under one unit. In the ADF, from their Amphibious Ready Element (ARE), Amphibious Ready Unit (ARU) to their Amphibious Ready Group (ARG), the ARG being the largest, it ranges from three hundred to two thousand.⁴³ Elements from Infantry, armored, artillery, and engineers with an attachment from their Navy and Air force permit littoral operations and establish a beachhead in any type of area of operations. This is a key capability especially since the global trend is moving to mega-cities next to ports. These forces that make up their capability are on a rotational basis and have at its core the ability to train, work and operate as one cohesive unit building on trust and competencies.

Currently, the construct of the CMBGs are large and just meet their current operational requirements. It would be easy on paper to draw up a Canadian equivalent, but harder in practice due to the history that the Forces have had with transformation. A Canadian Air-Ground Task Force or Canadian Amphibious unit comprised of an Infantry Battalion, mortars, Artillery forward observer with dismounted Recce and Engineers could easily be identified in the Division that does not have a CMBG, namely 5th Canadian Division. Without additional assets from the Royal Canadian Air Force, like helicopters, the Royal Canadian Navy cannot move this type of force and would need a capital purchase of ships that would enable these types of operations.

⁴² Brigadier General Johnson, "USMC Strategy for the Long War". *PowerPoint presentation*, (October, 2008)

⁴³ Ian Langford, Colonel, "Australian Amphibious Force an update". *PowerPoint presentation*, (2016)

This unit would be augmented by cyber, EW, and other enablers that would allow it the freedom to maneuver in any environment.

Conclusion

Military operations are founded based on trust, and trust is built up over time with members who live, work, and train day to day to conduct operations. If soldiers are the heartbeat of military formations, then trust is the grease that keeps the machine working, trust facilitates operations.⁴⁴ The Regimental system was key in building that trust. It was used to build units and was seen as the building block of a combat force. These units would come together and train for a short period then conduct operations or go back to training. The force generation cycle of the Canadian Forces worked for a long time, but it worked for a war that was fought long ago and one that will not be fought in the future. Transformation and modernization with the Forces have a long history of being challenged by institutional forces that appear too long for the days of the Second World War. Our adversaries have modernized, found the weakness in the west, and have created and or modified current structure to create forces that are leading in A2AD, cyber, and space. The CAF is still transitioning from analog to digital and creating joint doctrine that is workable to each service. Minister Hellyer was correct in that he indicated if a budget does not increase then a transformation of what the institution has is key to enable success in the future. Using the ADF as a way to provide joint enabled force capable of operating in the pan-domain is a cost-efficient compromise that allows the rest of the force to maintain training and current operations.

⁴⁴ Stanley Springer, John Schommer, Sean Jones, "Trust: the Sine Qua Non of effective Joint Operations", *Joint Force Quarterly* vol 84, (Missouri 2017),16-17

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