





Training for the Next War: The Canadian Army's Road to Battlefield Domination Major Marc Thébaud

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AIM

1. This service paper assesses how the warfare trends seen in recent conflicts should influence the Canadian Army (CA) to consider changes to its training so that Canada is better prepared to fight the next war. This paper will make recommendations, which can be implemented with minimal additional resources, regarding the CA's individual and collective training (IT and CT). The scope will be limited to the tactical level and will take into consideration the additional challenges posed by the COVID-19 pandemic to the CA's training capabilities.

INTRODUCTION

"How do you prepare your men for the shock of battle? For one thing, you need to make sure that your training is so hard and varied that it removes complacency and creates muscle memory—instinctive reflexes—within a mind disciplined to identify and react to the unexpected."

General J. Mattis (United States Marine Corps, Retired)

2. The current geostrategic context sees the United States (US) returning to great power competition following two decades of conflict against rogue states and terrorist networks.

Strategic competition currently focuses on China and other nations such as Russia.² In addition, Sino-Russian military cooperation has increased over the last few years,³ creating a sense within the US Department of Defense that China might be closely monitoring the Russian army's buildup near the Ukrainian border, with a view to drawing lessons learned "for its own pressure

¹ Jim Mattis, 2019. Call Sign Chaos. New York, NY: Ballantine Books, 27.

² United-States. White House, *Interim National Security Strategic Guidance*. United States, March 2021, 20, accessed Jan 5, 2022. https://www.whitehouse.gov/wp-content/uploads/2021/03/NSC-1v2.pdf

³ Jack Detsch and Amy Mackinnon, "China and Russia Turn Deeper Ties into a Military Challenge for Biden." *Foreign Policy*, April 20, 2021.

campaign in Taiwan." ⁴ China and Russia's mutual interests have also seen them partner in the development of new technologies aimed to counter those of the US and allied militaries such as Canada.⁵

- 3. While the integration of new technologies is key to dominating the battlefield, war "is still very much a human endeavour." To address the challenge posed by adversaries like China and Russia, the CA modernization strategy identifies as its centre of gravity that the "...development of junior and mid-level leaders is vital to meet the imperatives of concurrent operations." The strategy also describes its vital ground as: "[f]orce generating soldiers and teams for the contemporary and future operating environment...."
- 4. Although the contemporary operating environment has continuously evolved since the end of the Cold War, the CA's IT and CT have not fully kept pace, resulting in some shortfalls in training that might be exposed and result in defeat in a future war. To identify some of the changes that the CA must adapt to, two conflicts involving the use of emergent technologies will be discussed: the 2014 Russo-Ukrainian War, which took place in the Donbass region, and the Second Nagorno-Karabakh War, which took place in 2020 in the disputed region along the Armenian and Azerbaijan border. These conflicts will be examined to identify lessons that can be applied to the CA's IT and CT. Subsequently, a list of recommendations that can be implemented at minimal additional cost will be provided.

⁴ *Ibid*.

⁵ Samuel Bendett and Elsa Kania, "The Resilience of Sino-Russian High-Tech Cooperation." Accessed Jan 5, 2022. https://warontherocks.com/2020/08/the-resilience-of-sino-russian-high-tech-cooperation/.

⁶ Canada, Department of National Defence, Advancing with Purpose: The Canadian Army Modernization Strategy, 4e éd., 2020, 1, http://www.army-armee.forces.gc.ca/en/news-publications/canadian-army-modernization-strategy, 2. ⁷ *Ibid*, 19.

⁸ *Ibid*.

DISCUSSION

Russo-Ukrainian War

5. The 2014 Russo-Ukrainian War in the Donbass region saw Russian-backed anti-government separatists in conflict with the Ukrainian Army. Russian-backed forces efficiently used indirect fire, intelligence surveillance and reconnaissance (ISR) methods, and advanced electronic warfare (EW) to jam drones and disrupt its adversaries' Global Positioning System (GPS) links. The Russian backed forces' scheme of manoeuvre involved keeping their artillery units beyond the Ukrainians' visual and acquisition range, while using multiple drone layers, counter-battery radars, and other ISR assets to strike over the horizon. It is assessed that 80 percent of Ukrainian casualties were due to long-range artillery and rocket fire. It Once Ukrainian positions were softened by indirect fire, Russian-backed forces employed direct fire provided by their tanks and infantry units to conduct assaults on Ukrainian positions. These battles often took place in complex environments, including dense urban terrain, where Russian-backed forces did not refrain from using artillery. This lack of restraint shows that Russia does not hesitate to exploit Western norms regarding civilian casualties and that it may continue to operate in cities in future conflicts, forcing its adversaries to fight them in that environment.

⁹ Robert G. Angevine, "Learning Lessons from the Ukraine Conflict." Institute for Defense Analyses. Alexandria, Virginia, May 2019. Accessed Dec 22, 2021. https://nsiteam.com/social/wp-content/uploads/2019/07/NS-D-10367-Learning-Lessons-from-Ukraine-Conflict-Final.pdf, 8.

¹⁰ US Army Asymmetric Warfare Group, Russian New Generation Warfare Handbook, Version 2 (Fort Meade, MD: Asymmetric Warfare Group, Jan 2017), 12–13; SAIC Strategic Analysis & Assessments, Adapting to Operational Dissonance: Lessons Learned from the Ongoing Ukraine Conflict (Arlington, VA: SAIC, Sept 2017), 6–10.

¹¹ Phillip A. Karber, Russia's "New Generation Warfare": Implications of Ukraine for US & Allies, Briefing for 1st Special Operations Command, US Army, Ft. Bragg, NC (1 May 2015), 18.

¹² Robert G. Angevine, "Learning Lessons from the Ukraine Conflict." ..., 9-10.

¹³ Liam Collins, "A New Eastern Front: What the U.S. Army Must Learn from The War in Ukraine." Dispatches from the Modern War Institute, April 16, 2018. Accessed Dec 22, 2021 https://www.ausa.org/articles/new-eastern-front-what-us-army-must-learn-war-ukraine.

¹⁴ *Ibid*.

Russo-Ukrainian War- Urban Warfare Training

- 6. The lessons learned from the Russo-Ukrainian War can be useful for Western armies, but they are not fully reflected in the CA's training. Despite spending resources to digitize its forces, the CA does not sufficiently train its troops to fight in dense urban terrain against a peer adversary.
- 7. The RAND Corporation, an American non-profit global policy think-tank, says of urban warfare that

"[c]ities are often also the center of gravity for establishing governance and local control. [...] History shows that, contrary to some views about the inability of mechanized and armored forces able to operate in complex urban terrain, in fact such forces have become quite critical for operational success against a determined foe"¹⁵

During IT, troops are trained to navigate and operate without GPS, to camouflage and to respect strict light and noise discipline. This training is, however, mainly conducted in unpopulated environments. For example, candidates in the combat team commander's course (CTCC), which aims to "train selected sub-unit commanders to command a combat team in operation" ¹⁶ are not assessed in the field on fighting in an urban environment. By neglecting field training on urban warfare during the CTCC, the CA misses an opportunity to teach this skillset to its future combat unit commanders.

8. CTCC is a 30-day course and already has a full schedule, including classroom content on the theory of urban warfare. While acknowledging that developing and conducting training requires significant preparation, it would still be feasible to include some urban warfare field

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¹⁵ Gian Gentile, et al., "Reimagining the Character of Urban Operations for the U.S. Army the Past Can Inform the Present and Future." Santa Monica, California: RAND Corporation, 2017. https://www.rand.org/pubs/research_reports/RR1602.html.

¹⁶ Canada. Department of National Defence, "Combat Team Commander Course (CTCC)." Https://Tacticsschoolmsnready.ca/Course ctcc/, n.d. Accessed December 22, 2021.

training, without adding days on the course, simply by switching some current training days to urban warfare. If even one or two candidates were tasked to command during an urban warfare field exercise, this would be beneficial as other candidates would observe and learn from their colleagues. Additionally, due to the limited number of people who receive CTCC training, urban warfare training should be mandatory for combined arms at the sub-unit and unit level when the public health situation allows. In the meantime, professional development periods on urban warfare should be required within all field units.

Russo-Ukrainian War - Force on Force Training

- 9. The challenge of developing skills during CT is exacerbated by the lack of sufficient training using force on force (FoF) exercises that would see at least two forces fight each other, without scripts, in urban and non-urban environments. The importance of FoF can be inferred from the Russo-Ukrainian War and from other conflicts. As stated by a former USMC Commandant, General Robert Neller "[t]o meet the challenges of a peer-to-peer fight, we must incorporate independent actions and opposing will in our training at all levels." In fact, since 2018, the USMC has been moving towards FoF training to "develop the mindset and skills necessary to prevail in the coming fight."
- 10. While the CA is "advancing the use of simulated force-on-force training"¹⁹, this advancement is not being made consistently. Divisional simulation centres are heading towards the use of unscripted opposition forces during computer assisted exercises (CAX). This is certainly a step in the right direction; however, while CAX are a good tool to train planners, a

¹⁷ Gina Harkins, "New Force-on-Force 'Free-Play' Training Will Teach Marines to Think on their Feet." . Accessed Jan 5, 2022. https://www.military.com/daily-news/2018/10/24/new-force-force-free-play-training-will-teach-marines-think-their-feet.html.

¹⁸ *Ibid*.

¹⁹ Canada. Department of National Defence, Advancing with Purpose... 19.

limited number of participants get to manoeuvre troops or units by using computers that simulate scenarios. In contrast, FoF training provides relevant experience to all troops and should therefore be mandated at the sub-unit and unit level during field exercises.

Russo-Ukrainian War- Individual Battle Training Standards

- 11. Recent and rapid evolutions in the concepts, doctrine and means of conflict, like those seen in the Russo-Ukrainian War, often require that tactics, techniques and procedures (TTPs) be adjusted. To do so, it is necessary to have an unclassified common operating picture of the current battlefield at all levels in the CA. Intelligence cells attached to units are good at providing briefs on specific theatres of operations when requested; however, briefs do not guarantee that current information on conflict evolution is widely communicated across the CA. During the COVID-19 pandemic, the Defence Learning Network website has allowed CA members to complete training on some individual battle training standards (IBTS). This website could also be used to provide IT in the form of a mandatory annual IBTS on conflict evolution to all combat arms and combat service support soldiers. By implementing this change, the CA would enhance its troops' readiness, as recent information on battlefield evolution would be communicated to all the field forces.
- 12. It could certainly be argued that having an annual IBTS on conflict evolution might duplicate the role of theatre mission specific training (TMST). It is important to remember, however, that only a limited number of personnel are deployed overseas every year, so not all members of the field force will receive TMST and not all units will proactively request similar briefs to their intelligence cell. These limitations in coverage mean that some troops might be trained without taking in consideration the most recent TTPs of their adversaries. Moreover, not all TMSTs have a nexus to conflict evolution. For example, a member set to deploy to Latvia

will receive briefs on the most recent tactical updates regarding the Russian army. In contrast, a member who will deploy in a peace keeping mission in Africa will face less capable, irregular forces and will not receive training on the evolution of modern warfare. In short, as the CA does not provide the same level of updated information on conflict evolution across its troops, training and exercises are not always adapted to today's battlefield.

- 13. One counterargument against an annual IBTS on conflict evolution could be that it implies a relinquishment of doctrine, which is slow to evolve compared to the pace of conflict evolution; on the contrary, this IBTS could help generate a broader debate within the CA as it would be mandatory for all the troops and would therefore contribute to bringing CA's doctrine up to speed with today's battlefield.
- 14. Lessons learned from Ukraine's experience in the Donbass, can be applied to the CA's training by prioritizing mandatory FoF and increasing urban warfare training. Additionally, providing mandatory training on conflict evolution would improve the readiness of deployed and non-deployed field troops and could help spark discussions that could lead to adjusting TTPs and modernizing CA's doctrine.

Second Nagorno-Karabakh War

15. The second Nagorno-Karabakh War that took place in the disputed region of Nagorno-Karabakh in 2020, lasted only forty-four days before Azerbaijan emerged as the victor against Armenia. The main factors that enabled Azerbaijan to achieve this swift victory were its use of loitering munitions and remotely piloted aircraft systems (RPAS), its ability to fight in multiple domains (land, air, cyber and space) and its preparedness, including troop training.²⁰ During this war, the Azerbaijan Army's ability to sense (visually and on the electromagnetic spectrum) and

²⁰ Alexander Stronell, "Learning the Lessons of Nagorno-Karabakh, the Russian Way." Https://Www.liss.Org/Blogs/Analysis/2021/03/Lessons-of-Nagorno-Karabakh, March 10, 2021.

act outmatched the Armenian Army's ability to act and shield their forces. When one considers the drones that were used by Azerbaijan (the HAROP loitering munition system) and looks ahead to further developments in Artificial Intelligence (AI), one can anticipate that the next war will potentially see swarm drones used as key weapons systems.²¹ In fact, the Russian Defense Ministry confirmed that it tested swarm drones during a military exercise in 2020.²² These tests show that Russia is taking the development of AI seriously and is following through on its 2019 National Strategy for AI.²³ Does the CA's training prepare its soldiers for this probable technological evolution?

Second Nagorno-Karabakh War- Electronic Warfare Training

- 16. The CA describes the brigade group as "the lowest level of headquarters that can integrate and synchronize joint effects."²⁴ The brigade is the level within the CA that trains to fight in all domains;²⁵ however, the CA's training at the brigade level and below does not sufficiently emphasize the importance of mobility or of shielding against detection in the electromagnetic spectrum. Put simply, current training would not fully prepare the CA to camouflage its electromagnetic footprint and to move its brigade command post (CP) rapidly if detected by loitering systems and RPAS.
- 17. Existing training on EW provides little to inform combat arms troops on how to camouflage their electromagnetic footprints. Combat units almost never undertake communication exercises and are generally not comfortable shifting between primary, alternate,

²¹Samuel Bendett, "Strength in Numbers: Russia and the Future of Drone Swarms.". Accessed Dec 22, 2021. https://mwi.usma.edu/strength-in-numbers-russia-and-the-future-of-drone-swarms/.

²² "Swarm of Drones used in Kavkaz-2020 Exercise.". Accessed Jan 5, 2022. https://tass.com/defense/1204513.

²³ "Putin Approves National Strategy for AI.". Accessed Jan 5, 2022. https://tass.com/economy/1082644.

²⁴ Canada, Department of National Defence, Advancing with Purpose..., 17.

²⁵ Ibid

contingency and emergency communication methods.²⁶ EW shortfalls such as these might be exploited in the future by drone swarm attacks that will be able to overwhelm air defence (AD) systems such as those Canada may purchase in the future.²⁷ In short, poor EW hygiene might facilitate detection by a technologically advanced enemy, and might result in a high number of casualties, even if the CA is eventually equipped with AD systems.

18. Brigade signal squadrons conduct communication exercises and are aware of the most recent methods of camouflaging their electromagnetic footprints. However, EW is now such a key factor in the new operating environment that it should be treated as an all arms responsibility. Training should be adjusted so that troops at all levels and in all arms can better camouflage their electromagnetic footprints as well as operate in a degraded mode where the use of technology is not always possible. Adjusting some portions of the training by excluding GPS and cellphones and adding jamming episodes, would allow the CA to create realistic degraded-mode training that would help to sharpen the minds of tactical leaders so that they can out-think an enemy under less-than-ideal conditions.

Second Nagorno-Karabakh War- Mobile Command Posts

19. Afghanistan provided the CA with combat experience, but it also created some habits that should be re-evaluated; for example, we still see brigade groups and even battle groups establishing static command posts during exercises. In fact, when one visits unit and brigade exercises, chances are that one will find command posts filled with staff, computers, cables and an impressive amount of equipment that slows them when moving to another location. While

²⁶ Jeremy Hofstetter and Adam Wojciechowski, "Electromagnetic Spectrum Survivability in Large-Scale Combat Operations. Accessed Dec 22, 2021."

https://www.benning.army.mil/infantry/magazine/issues/2020/Winter/PDF/7 Hofstetter EW txt.pdf, March 2020.

²⁷ Samuel Bendett, "Strength in Numbers: Russia and the Future of Drone Swarms." ...

some brigade groups use mobile brigade and unit CPs when participating in MAPLE RESOLVE, an exercise used to ensure that units are ready to deploy overseas, other brigade groups choose to use static CPs. By failing to adopt mobile CPs as the standard for this exercise, the CA is contributing to the possibility of increased casualties as well as teaching inadequate lessons to junior and mid-level leaders.

20. The second Nagorno-Karabakh War gives a glimpse of what AI will bring to the battlefield, where it will enhance the sense and act operational functions of armies through the use of drone swarming capabilities. The CA must shield its forces by conducting training that includes portions in degraded mode, as well as focusing on CP mobility and creating all arms training on EW.

CONCLUSION

21. The CA is not fully adapting its training to modern battlefield requirements. Conflicts like the Russo-Ukrainian War and the Second Nagorno-Karabakh War have shown that the evolution of technologies is affecting how armies fight, and have therefore highlighted the importance of providing current and quality training to the troops. The CA must generate troops capable of mobile operations, of camouflaging their electromagnetic footprints, of operating in urban and non-urban environments, and of fighting in a degraded mode. To help develop these competencies, soldiers must be trained in a stimulating and realistic FoF environment.

RECOMMENDATIONS

- 22. The following recommendations are drawn from the lessons learned from Second Nagorno-Karabakh and the Russo-Ukrainian Wars (see Annex A for summary). These recommendations can be implemented at minimal additional cost. They take into consideration the fact that the CA currently conducts limited CT due to the COVID-19 pandemic.
 - a. Individual Training
 - i. A mandatory online IBTS on conflict evolution should be produced for all combat arms and combat service supports soldiers. This training should include content on EW, emergent technologies and TTPs newly developed by adversaries.
 - ii. CTCC should include field training on urban warfare where some candidates would be formally assessed during an offensive or defensive operation.
 - b. Collective Training
 - i. FoF field training should be mandated at least once a year at the sub-unit level, and for units preparing for high readiness.
 - ii. Unit and formation CPs preparing for high readiness should be mandated to be mobile.

- iii. All collective training should include portions where troops will have to operate in degraded mode, where their communication will be jammed and their GPS systems will be down.
- iv. Units and brigades should include urban warfare in their professional development (PD) plans for officers and non-commissioned members. This PD should transition to combined arms exercises in urban environments once the pandemic and the reconstitution efforts allow.

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Annex A- TRAINING FOR THE NEXT WAR: THE CANADIAN ARMY'S ROAD TO BATTLEFIELD DOMINATION (summary)

