



CLOSING THE GAP: INFANTRY EQUIPMENT AND DOCTRINE

Major Edward A. Marsh

JCSP 50

Service Paper

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.

© His Majesty the King in Right of Canada, as represented by the Minister of National Defence, 2024.

PCEMI n° 50

Étude militaire

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 le Roi du chef du Canada, représenté par le ministre de la Défense nationale, 2024.

CANADIAN FORCES COLLEGE - COLLÈGE DES FORCES CANADIENNES

JCSP 50 - PCEMI n° 50
2023 - 2024

Service Paper – Étude militaire

CLOSING THE GAP: INFANTRY EQUIPMENT AND DOCTRINE

Major Edward A. Marsh

“This paper was written by a candidate 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.”

« 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. »

CLOSING THE GAP: INFANTRY EQUIPMENT AND DOCTRINE

AIM

1. This paper aims to identify infanteer-related equipment issues within the Canadian Army (CA) and the consequential gap created between CA doctrine and current capabilities.

INTRODUCTION

2. A September 2023 article from European Defence and Security highlighted several large-scale procurement projects for the Canada Armed Forces (CAF) and how this has masked other equipment issues within the CAF.¹ The piece provided a brief recap of multiple news articles published within Canada on CA equipment shortcomings. However, the fact that German media reported on Canada's equipment issues should be alarming as the displeasure Canadian soldiers have towards some of their equipment is becoming known internationally.² Within the article, two key issues relating to CA equipment were identified, which were Leopard 2 serviceability, and individual soldier equipment. While the issues within the Leopard fleet are well understood, infantry soldiers feel less attention is being paid to the equipment used by them.

3. Recent CAF publications have placed importance on modernizing CAF capabilities and equipment. *Close Engagements* makes many references to equipment and what is required for the CA to be successful in the Future Land Operating Environment (FLOE). However, the equipment referenced throughout the document is mostly Command and Control (C2) type systems, and not items like helmets, body armour, and combat clothing. Also, equipment procurement for items used by the infantry soldier is often procured for the whole army if it is an overlapping requirement. This mass procurement has resulted in issued equipment like the current Canadian Forces Tactical Vest (Tac Vest), which has been widely disliked by soldiers for over a decade for issues with modularity, carriage, and usability.³ These types of equipment shortfalls have created larger problems that are mostly left to the units or individuals to resolve on their own. This paper will explore some of the equipment issues experienced by infantry soldiers, their units, their implications for how soldiers complete their tasks, and recommendations to mitigate some of these issues to keep in line with current doctrine.

¹ David Saw, "Major Procurements Mask Immediate Equipment Concerns for Canada," *European Security and Defence*, September 25, 2023. <https://euro-sd.com/2023/09/articles/33974/major-procurements-mask-immediate-equipment-concerns-for-canada/>. – Accessed 17 February 2024.

² This statement is based on feedback the writer received from their rifle company while deployed to Latvia with the eFP Battle Group, comments from sub-sub-unit leadership from an infantry battalion, and general observations and experiences of the writer.

³ Canada, Department of National Defence, *Statement of Operational Requirements: Dismounted Infantry Capability Enhancement - Close Combat Modular Fighting Rig and Soldier Body Armour System*, (Ottawa, 2022), 5.

~Additionally, below is one of many references found by a simple Google.ca search. The amount of commentary by current and former Regular Force and Reserve Force members with a negative opinion of the CF Tac Vest significantly outweighs those who have a neutral or positive opinion.

Jarnhamer. "Chest Rig Preference." *Army.ca Forums*, May 19, 2013. [Chest Rig preference | Army.ca](#) – visited 17 February 2023.

DISCUSSION

Integrated Soldier Systems Program and Load Carriage

4. *Close Engagement* (CE) describes the FLOE as a dynamic and complex environment in which capable actors, such as developed states, will use modern technology in combination with armed conflict to pursue their interests.⁴ Compounded by humanitarian crises and natural disasters, CE illustrates that future wars will be extremely complex. Understanding this, it is logical that effort has been placed on advancing C2 systems to enable tactical-level decision-making on the ground within this environment. The CAF is currently implementing the Integrated Soldiers System Program (ISSP) which includes relatively modern technology in a modular tactical vest. For infantry units, the technology that the ISSP brings has been relatively unpopular with soldiers. This is namely due to the additional weight of the equipment, battery life and weight of batteries, and also how information is disseminated at the sub-unit level and lower. Traditionally, infantry tactical activities have been planned, briefed and executed in an analog manner, meaning paper and pencils. ISSP brings technology into lower echelons of the C2 structure which is seen as redundant, and posing a threat to traditional C2 skills (face-to-face interactions). Because of this, units have tossed aside the technology from these vests and issued the ISSP vests to soldiers to replace the standard issue Tac Vest - which does not meet the requirements of today's infanteers.⁵

5. While the technology provided by ISSP has been unpopular, this could largely be due to a change in the status quo of how infantry units have operated for generations. The threat of reduced or lost C2 competency created by the introduction of technology can be mitigated through the continuation of training. However, the reality is that platoon and section-level leadership is reluctant even to use this technology as it is contradictory to the leadership training they receive throughout the Individual Training system. For instance, in leadership courses, command presence is one of the items included in command Performance Objectives (PO) assessments. The expectation from Directing Staff (DS) assessing students is that the commander is visible, heard, and in control. This creates a fundamental conflict between how ISSP operates and how junior leaders' minds have been shaped to command in their training.⁶ ISSP enables the transfer of information, issuing of direction and reporting of positions without the need for traditional communications over radios or in person. While this does enable faster transmission of information, it is done in a manner that removes the face-to-face dialogue which is more conducive to confirming that the information is understood. Additionally, it is stated in *Strong, Secure, Engaged* (SSE) that the CAF needs to be able to operate in a contested, degraded, and limited environment in the future.⁷ Many junior leaders see ISSP as contradictory in principle to

⁴ Canada, Department of National Defence, 2019, *Close Engagements: Land Power in an Age of Uncertainty*, (Kingston: Kingston Publishing Office), 11.

⁵ In Fall 2021, 2 PPCLI issued out ISS vests to soldiers so that they could functionally carry all the equipment they were directed to fit within their load carriage system. Soldiers utilizing the Tac Vest were unable to fit all the directed equipment in the space provided in the issues system.

⁶ DS assess students by utilize a grading rubric according to the Qualifications Standard Training Plan (QSTP) for the course they are instructing.

⁷ Canada, Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy*, (Ottawa: NDHQ, 2017), 33.

being able to fight in a comms-degraded environment, which is further exacerbated by questions regarding the encryption of transferred data from ISSP.⁸

6. Ultimately, ISSP has not been a failure in the eyes of soldiers. There are uses for the integrated C2 system outside of the infantry, and many infanteers have chosen to sign for an ISSP vest to replace the issued Tac Vest. Without the additional weight of the radio, command module, and batteries, the ISSP vest provides a simple, Molle-panelled vest that provides a level of modularity non-existent in the other issued option. This has been especially important for machine gunners, M203 grenadiers and support weapon crews as they can access the items and equipment needed for their assigned roles. However, more often than not, soldiers still prefer to privately purchase their load carriage system which has become the norm for infanteers. Even the cover of CE shows a soldier utilizing neither the Tac Vest nor the ISSP vest, and a large portion of photos posted by the CAF on social media show soldiers using their non-issued carriage systems. Within the Canadian Army, commanders have accepted that the benefits of soldiers using equipment that works for them outweigh the risks of soldiers not using the issued Tac Vest.⁹ Even at the time of user acceptance for the Tac Vest, there were 10 pages of changes recommended, and 25 years later, the technology and usability of these vests have long since become obsolete.¹⁰ Principally in infantry doctrine, the platoon is seen as the essential element in which to achieve excellence, as excellent platoons make great companies, which make good battalions, brigades and so on.¹¹ For a platoon to achieve excellence, the soldiers within it must also achieve that standard. This is hard to do when your load-bearing equipment does not enable you to use or access your essential tools.

7. Despite the ISSP vest mitigating the modularity issues experienced with the Tac Vest, the CA is in the process of replacing the Tac Vest with the Close Combat Modular Fighting Rig (CCMFR) as part of the Dismounted Infantry Capability Enhancement (DICE).¹² While initially directed at the light infantry battalions, DICE is planned to transition to the Infantry Capability Enhancement (ICE) at a later time. While being welcomed news by soldiers, the fact that the CCMFR pre-exists 2016,¹³ soldiers outside of the third battalions are generally pessimistic about seeing these. In fact, according to current timelines, the CCMFR is not expected to be seen outside of the light battalions for years. This reality is further evidenced by the CA's actions to broaden the distribution of ISSP vests, specifically to reconnaissance platoons and deploying personnel as an interim measure until the CCMFR is implemented.¹⁴

⁸ ISSP encryption is enhanced in higher-level transfer of data, but limited for the low-end user.

⁹ There is a substantial argument to make that the issued Tac Vest presents more risk to soldiers in a close combat engagement due to the excessive restraints on pouches. It also presents the impression of a tactical garment designed for second or third echelon troops, not for closing with and destroying an enemy.

¹⁰ Canada, Land Force Trials and Evaluation Unit, *Tactical Vest (TV) - User Acceptance Trial Report*, (Gagetown: 1999), Annex B.

¹¹ Canada, CTC Infantry School, *B-GL-309-003/FP-001 Infantry Section and Platoon in Operations*, (Kingston: 2021), 1-1.

¹² "... Dismounted Infantry Capability Enhancement ...," 5.

¹³ Capt William Morley, Director Land Requirements, *Close Combat Modular Fighting Rig (CCMFR): Briefing to ACDB 22-23 March 2016*.

¹⁴ DLR 5-5, COS Army Ops, *Canadian Army (CA) Implementation Order – Modular Load Carriage System (MLCS) Augmentation*, (11 July 2023), 1.

Surveillance, Target Acquisition, Night Observation

6. SSE addresses many large-scale procurement projects to be covered under the 2017 defence policy, but only a few items that relate to the individual infantryman. These items are limited to weapons and soldier night vision systems.¹⁵ *Advancing with Purpose: The Canadian Army Modernization Strategy* (CAMS) further expands on signature capital investments that also include uniforms, light force enhancement (DICE), service rifles modularity, as well as night vision.¹⁶ Arguably, one of the greatest hindrances to infantry battalions achieving mandated individual battle task standards (IBTS) and battle task standards (BTS), besides time, has been the limited supply of monocular night vision goggles (MNVG) and laser aiming devices (LAD), grouped as Surveillance, Target Acquisition, Night Observation (STANO) equipment.¹⁷ This has resulted in brigades having to pool STANO and conduct round-robin transfers of equipment to provide units with sufficient quantities to conduct training. While numbers have appeared to improve over recent years, the limited supply of STANO has largely been mitigated by reduced effective strength within the infantry battalions.

7. Before A Company, Second Battalion Princess Patricia's Canadian Light Infantry (2 PPCLI) deployed to Latvia as part of the Enhanced Forward Presence Battle Group (eFP BG Latvia) in 2022, soldiers from across the unit were pooled to fill the ranks of the deploying company. Along with the movement of soldiers, the unit had to reallocate equipment, such as STANO, to ensure the company was properly equipped to complete their Pre-Deployment Training (PDT). The PDT included day and night live fire ranges from section level up to company level in a combined arms grouping. This required all soldiers within the company, and attachments, to be equipped with both MNVGs and LADs. As a result, STANO was requested from other units within the brigade to ensure there was enough to supply both the soldiers completing PDT as well as the safety staff required to run the ranges, this equated to about 130 sets of STANO for A Company alone. Today, with the improved STANO numbers within 2 PPCLI, A Company still only holds 70 sets of MNVGs and 42 sets of LADs.¹⁸

8. The significance of the shortage of STANO within the battalions is threefold. The first is that it inhibits infantry battalions from doing what is at the heart of the role of the infantry, which is to conduct operations by day and night, in all weather, terrain and climates.¹⁹ The second aspect relates to training for night operations, resulting in sequencing IBTS and BTS with other units within the brigade to ensure enough STANO is made available to units when they need it. Third, since soldiers only receive STANO for specific training requirements outside of operational deployments, soldiers rarely if ever become truly proficient in operating at night. This reality clashes with current Canadian doctrine. Not only is it difficult for platoons to achieve excellence in night fighting, let alone battalions, but individual soldiers, who we expect to be as

¹⁵ Canada, "Strong, Secure, Engaged," 36.

¹⁶ Canada, Department of National Defence, *Advancing with Purpose: the Canadian Army Modernization Strategy, 4th Edition*, (Ottawa: 2020), 53.

¹⁷ STANO also incorporates other thermal and infrared imaging systems, but the term STANO is often used within battalions to refer to night fighting equipment (NFE).

¹⁸ Canada. *2 PPCLI Equipment Holdings and Serviceability Tracker* – Accessed 15 February 2024.

¹⁹ This used to be stated explicitly in Canadian Doctrine and is still evident on reserve units' recruitment pages, however in current doctrine the infantry's ability to conduct operations by day and night is implicit throughout the doctrine.

proficient with an MNVG as they are a map and compass, only sporadically get training opportunities.²⁰

9. Despite the shortage of STANO amongst the field force, the CA is in the process of acquiring modern night vision through the Night Vision Systems Modernization (NVSM) project.²¹ However, the implementation for the NVSM is currently targeted around 2026/2028, meaning soldiers will likely have a few years before seeing these new devices within their units. This is with the expectation that the project will progress as planned, which would appear to be out of the ordinary for Department of National Defence procurements. Additionally, as the project is only projected to be funded between \$250 million to \$499 million, and split with the Royal Canadian Navy, it is most likely that this project will augment existing, tired, STANO rather than replace it with new items. This would not be a bad decision, considering that in 2018 when the Royal Canadian Infantry Corps was asked about future night vision requirements, they responded that quantity was more important than adopting a newer generation of night vision.²² What will remain to be seen is if the current MNVGs will be divested as eluded to in CAMS.²³

CONCLUSION

10. Soldiers' criticism of personal equipment is nothing new and should be embraced as this signifies that soldiers are invested in the equipment to which they use. It is also understood that the CAF is in a period of multiple conflicting priorities from culture change, to personnel shortages, an evolving and complex FLOE, and budget cuts. While large procurement projects and new, high-level, capabilities are often at the front of news, it is just as important to highlight the other projects underway for individual soldiers' equipment. While the CCMFR and NVSM are both in progress, which may mitigate the two issues identified in this paper, the reality is that both of these programs are not very well articulated to soldiers. Further exacerbating this issue is the habit of small projects being cancelled as soon as budgetary constraints are imposed. Compounded with a complex, and difficult-to-navigate procurement process, which has resulted in relatively simple procurements sometimes taking over a decade (like the C22 pistols²⁴) the general mentality amongst soldiers when informed of new acquisitions is to 'believe it when they see it.' More importantly, the quality of the equipment issued to soldiers is taken as a representation of how valued they are to the institution. In a period when "trust" has become a key message to combat the elements of the culture that need changing, there is also a relationship in which the institution should be trusted by its soldiers to provide the gear and equipment it says it will give them, within the timelines it presents. Maintenance of Morale, besides being a principle of war, is also the second most important aspect of the moral plane of conflict, second only to leadership. As stated in *Land Operations*, "Morale is nurtured through discipline, self-

²⁰ *Infantry Section and Platoon in Operations*, 2-9.

²¹ Canada, Canada.ca, Line of Sight: Soldier System Deliveries - Short, Medium and Long Term, (15 February 2023). <https://www.canada.ca/en/army/services/line-sight/articles/2023/02/soldier-system-deliveries.html>. – Accessed 18 February 2024.

²² As the Operations Officer for the Infantry School in 2018, I was usually involved with RCIC operations as the Commandant of the school was also the Deputy Director, Royal Canadian Infantry Corps.

²³ *Advancing with Purpose: the Canadian Army Modernization Strategy*, 55.

²⁴ Matt Gurney. Matt Gurney: Canada's bid to replace WWII-era pistols a case study in government incompetence. *National Post*, January 14, 2022. <https://nationalpost.com/opinion/matt-gurney-on-military-sidearms> - Accessed 19 February 2024.

respect, and confidence of the soldier in his commanders and his equipment, and a sense of purpose.”²⁵ The CAF needs to manage the future requirements of the individual soldier as well as national capabilities because, in a future conflict, it will still be the infanteer on the ground doing the hard fighting.

RECOMMENDATIONS

11. This section presents a list of recommendations to help mitigate some of these infantry-related equipment shortfalls, within the current procurement environment:
 - a. While mostly implemented within the field force, authorize soldier-purchased load carriage systems until the CCMFR reaches implementation and consider a reimbursement process similar to combat boots.
 - b. Revisit the integration of ISSP into infantry battalions to assess its relevance, and to not waste these resources within units that are unlikely to employ it.
 - c. Consider systems in use by CANSOFCOM as part of the CCMFR, as these systems are popular with soldiers, and often privately purchased by them.
 - d. Increase messaging of ongoing procurement projects for infanteers, and press for ruthless adherence to timelines.
 - e. As part of the NVSM, prioritize quantity over newer technology.
 - f. Delay divestment of current MNVGs units that are still serviceable, to augment the number of new systems procured.
 - g. Consider an evergreen approach to the CCMFR in which loadbearing equipment is purchased as a system (belts, rigs, and plate carriers) and purchased frequently for smaller groups of units. While there would be a lack of standardization across divisions, it would enable continuous modernization of load-bearing systems as technology and the FLOE evolve.

²⁵ Canada, Department of National Defence, *B-GL-300-001/FP-001 Land Operations*, (Ottawa: 2008), 3-6.

BIBLIOGRAPHY

Canada. *2 PPCLI Equipment Holdings and Serviceability Tracker*. Accessed 15 February 2024.

Canada. Canada.ca. *Line of Sight: Soldier System Deliveries - Short, Medium and Long Term*, February 15, 2023. <https://www.canada.ca/en/army/services/line-sight/articles/2023/02/soldier-system-deliveries.html> Accessed 18 February 2024.

Canada. Department of National Defence. *Advancing with Purpose, the Canadian Army Modernization Strategy, 4th Edition*. Ottawa, Canada: HQ, Canadian Army, 2020.

Canada. Department of National Defence. *Close Engagements: Land Power in an Age of Uncertainty*. Kingston: Kingston Publishing Office, 2019.

Canada. Department of National Defence. *B-GL-300-001/FP-001 Land Operations*. Ottawa: 2008.

Canada. Department of National Defence. *Statement of Operational Requirements: Dismounted Infantry Capability Enhancement - Close Combat Modular Fighting Rig and Soldier Body Armour System*. Ottawa, 2022.

Canada. Department of National Defence. *Strong, Secure, Engaged: Canada's Defence Policy*. Ottawa: NDHQ, 2017.

Canada. Forces.gc.ca. *Night Vision System Modernization*, December 1, 2023. <https://apps.forces.gc.ca/en/defence-capabilities-blueprint/project-details.asp?id=1466>. Accessed 18 February 2024.

Canada. Land Force Trials and Evaluation Unit. *Tactical Vest (TV) - User Acceptance Trial Report*. Gagetown: Combat Training Centre, 1999.

Canada. CTC Infantry School. *B-GL-309-003/FP-001 Infantry Section and Platoon in Operations*. Kingston: Canadian Army Doctrine and Training Centre, 2021.

Canadian Army Today. "Trials of helmets and load carriage vests for dismounted infantry are informing procurement for the rest of the Army." *Canadian Army Today*, December 21, 2023. <https://canadianarmytoday.com/trials-of-helmets-and-load-carriage-vests-for-dismounted-infantry-are-informing-procurement-for-the-rest-of-the-army/>

DLR 5-5. COS Army Ops. *Canadian Army (CA) Implementation Order – Modular Load Carriage System (MLCS) Augmentation*. 11 July 2023.

Gurney, Matt. Matt Gurney: Canada's bid to replace WWII-era pistols a case study in government incompetence. *National Post*, January 14, 2022. <https://nationalpost.com/opinion/matt-gurney-on-military-sidearms>

Jarnhamer. "Chest Rig Preference." *Army.ca Forums*, May 19, 2013.
<https://army.ca/forums/threads/chest-rig-preference.110630/>

Morley, Capt William. Director Land Requirements. *Close Combat Modular Fighting Rig (CCMFR): Briefing to ACDB 22-23 March 2016*.

Saw, David. "Major Procurements Mask Immediate Equipment Concerns for Canada." *European Security and Defence*, September 25, 2023. <https://euro-sd.com/2023/09/articles/33974/major-procurements-mask-immediate-equipment-concerns-for-canada/>