

CANADIAN ARMY



TODAY

SPRING 2025 | VOLUME 9 | ISSUE 1

THIS ISSUE

- Modernizing for major combat operations
- Q&A with the Army Sergeant Major
- Sharpened sense for the Rangers
- Establishing brigade C4ISR
- Tank concentration strategy
- Industry's INT training support
- Mobility and the next big gun
- Automating sensor to shooter

Brigade Concept

A change for the battlegroup in Latvia

Step inside the General Dynamics BATTLE LAB

To arrange your visit contact:
info@gd-ms.ca

Where bold ideas meet real-world challenges.

GENERAL DYNAMICS
Mission Systems–Canada

gdmissionsystems.ca



CANADIAN
ARMY TODAY

IN THIS ISSUE

SPRING 2025 | VOLUME 9 | ISSUE 1

THEME

14 MODERNIZING FOR MAJOR COMBAT OPERATIONS

Based on its assessment of global events, the Army believes it must be ready for a major combat operation in five years. And the Army of today is not the Army needed for the future. BGen Stéphane Masson explains the priorities of modernization.

20 BRIGADE CONCEPT By Chris Thatcher

During a NATO evaluation of the combat readiness of the Canadian-led multinational battlegroup in Latvia, the full capability of the new multinational brigade was deployed to the field.

24 C4ISR FOR LATVIA By Chris Thatcher

Inside the challenge of standing up the multinational brigade's tactical network to enable survivable command and control.

DEPARTMENTS

56 RESERVE FORCE By Chris Thatcher

Integrating new tech: 39 Canadian Brigade Group trials the Integrated Soldier System and Cloud TAK, proving the concept of a TAK ecosystem.

60 CANADIAN ARMY YESTERDAY By John Boileau

First battle: On Apr. 22, 1915, the Canadian Division met its baptism of fire at the Second Battle of Ypres. The Canadians were not found wanting.

62 SCIENCE & TECH By Michael Rostek, Yazan Qasrawi and Nancy Teeple

Strategic foresight: A planning tool for uncertainty and change in a rapidly evolving security environment.

66 ON THE HORIZON

Sensor-to-shooter: How a team of reservists won the Army's first hackathon with a solution to digitize and automate the sensor-to-shooter link.



On the Cover:

Member of the Princess Patricia's Canadian Light Infantry during the NATO Multinational Brigade-Latvia exercise Resolute Warrior in November 2024.

Photo: MNB-Latvia Imagery

IN THIS ISSUE

SPRING 2025 | VOLUME 9 | ISSUE 1

FEATURES

- 30 THE AIR DEFENCE PLAN** By Chris Thatcher
What was once a singular project to acquire a Ground-Based Air Defence system has become a multi-phased approach to resurrect a deficient capability since 2012.
- 32 Q&A WITH THE ARMY SERGEANT MAJOR**
Chief Warrant Officer Christopher Robin shares soldiers' concerns as the Army scales up a multinational brigade in Latvia and embarks on its largest modernization effort, including a review of its structure.
- 38 INT WITH EASE** By Chris Thatcher
To better train intelligence teams at the tactical level, the Canadian Army Intelligence Regiment has turned to technology and industry support.
- 42 TANK CENTRALIZATION** By Allan Joyner
The Army has concentrated the Leopard 2 main battle tank fleet in Edmonton to ensure operational viability until 2035. But it's also looking at what comes next.
- 46 THE NEXT BIG GUN** By Chris Thatcher
Lessons from the war in Ukraine are driving some of the key considerations for the Indirect Fires Modernization project, including the need for self-propelled artillery.
- 50 EYES OF THE NORTH** By Ken Pole
Under an initiative known as the Canadian Ranger Enhancement, the Army is conducting a holistic review of the structure, training, and operational roles of the Rangers.
- 54 ARCTIC MOBILITY** By Ken Pole
While much of the focus on modernizing northern capabilities has been on space, air, and sea platforms and sensors, there's still a need for ground-based transport.



CYBER AND DIGITAL
OUTLOOKS

OCTOBER 30, 2025 | OTTAWA, ON

THE FUTURE OF DEFENCE IS DIGITAL. ARE YOU READY?

Join key decision-makers from CSE, SSC, DND,
and top industry experts and gain insights into
emerging threats and strategies to safeguard
our digital landscape.

REGISTER NOW
cyberdigitaloutlooks.ca

Proudly created and
brought to you by:  **CADSI**

defenceandsecurity.ca

EDITOR'S NOTE



The Canadian-led formation in Latvia has been dismissed as a mere tripwire should Russia once again turn its sights on the Baltics—a commendable effort but no where near sufficient for the task. As the Armed Forces of Ukraine have repeatedly demonstrated, a modest force can be a formidable foe, nimble in the field and quick to adapt.

So, for all the limitations of the Canadian Army—and there are many—the force being scaled up in Latvia is a considerable and capable multinational configuration.

That capability was on full display during Exercise Oak Resolve earlier this year. Billed as an exercise, but more a training opportunity within an ongoing operation, it marked the first in-theatre evaluation of the Canadian-led battlegroup under the newly formed Canadian-led multinational brigade. Nine nations comprise the former and 14 the latter, the largest mix of countries in any NATO formation.

Conducted under the ever-present eye of Russia, Ex Oak Resolve was “a key piece of showing what we do,” said Colonel Cédric Aspirault, commander of Multinational Brigade-Latvia.

The force assembled in Latvia might be a modest force, but when your primary mission is to deter, you do that by demonstrating that “we are really good at what we do,” he said of the training event in which he deployed the full potential of the brigade.

“That’s an important piece. The deterrence part [of my mission] is to maintain the status quo. To maintain the status quo is to show strength—a strong alliance and unity here in theater. ... [We are] proud of showing the results of the team and what they’ve accomplished, because they’ve done extremely well together, and they’ve done it in a very short time. ... [In] less than two months, they were able to develop the capacity to fight the full battlegroup.”

In this issue, we highlight some of the capabilities that have been delivered or are in development for the mission in Latvia, including loitering munitions, air defence, and a brigade tactical network, and even load carriage vests.

However, the changes in combat evaluation and the burgeoning capabilities of the brigade all underscore the vital importance of Army modernization. And that’s where we begin this edition. ■

Chris Thatcher, Editor

CONTRIBUTORS

Publisher & Editor: Christopher Thatcher
Contributing Editor: Ken Pole
Contributing Editor: Allan Joyner
Contributing Writers: John Boileau, Treena Hein, Yazan Qasrawi, Michael Rostek, Nancy Teeple
Photographers: Allan Joyner, Daniel Rogall
Contributing Photographers: MCpl Simon Arcand, Maj Matt Becker, Bdr Sam Blake, Cpl Bryan Bodo, MCpl Bryce Cooper, Bdr Maxime Côté, MWO Stephane Gauvreau, Lt(N) Pamela Hogan, Bdr Albert Law, Cpl Marc-André Leclerc, Pvt Erika Licursi, Cpl Brandon Lin, MCpl Alana Morin, Kevin Paul, S1 Megan Sterritt, S1 Bryan Underwood
Content Coordination: Directorate of Army Public Affairs
Graphic Design: Daniel Rogall
Web Development: Wavelength Media
Social Media: Allan Joyner Productions
Advertising: Christopher Thatcher

CONTACT US

We welcome article ideas and feedback.
Phone: 613-983-8141
Email: editor@canadianarmytoday.com
Mail: 300 Greenbank Road, Unit 2, Ottawa, ON, K2H 0B6
Web: www.canadianarmytoday.com

FOLLOW US



CdnArmyToday



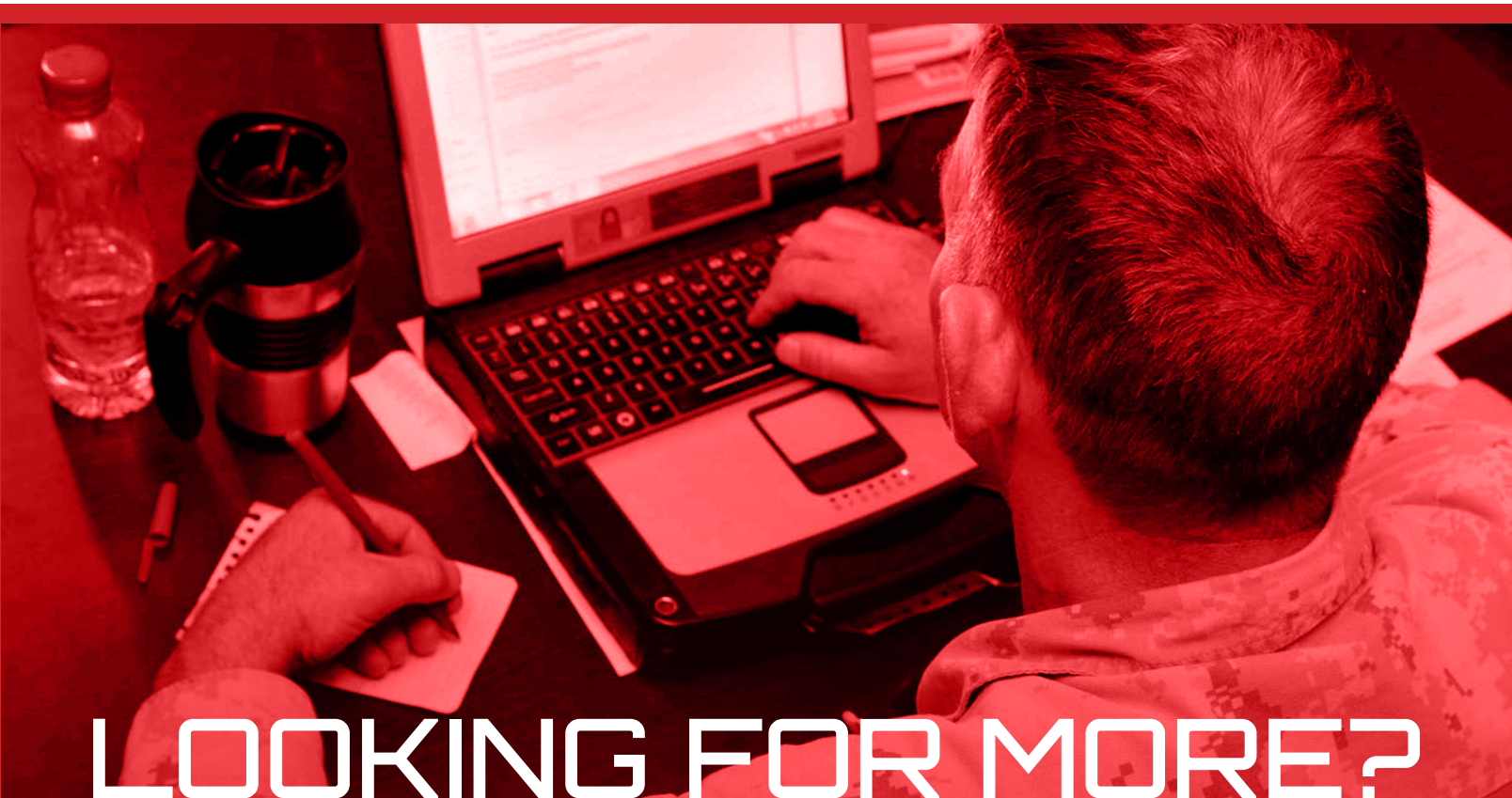
@CdnArmyToday

SUBSCRIPTIONS

subscriptions@canadianarmytoday.com

Canadian Army Today is published by Cremona Ink
ISSN 2561-584X (Print) • ISSN 2561-5858 (Online)
Canadian Army Today is an independent publication and does not represent the views of the Canadian Army, the Canadian Armed Forces or the Department of National Defence. Editorial does not necessarily reflect the views of the publisher. All material published remains the copyright of Cremona Ink. No part of this publication may be reproduced, in whole or in part, without written permission from the publisher.

Printed in Canada. Publication Mail Agreement Number: 43470516



LOOKING FOR MORE?

Visit **Canadian Army Today** online

The only magazine dedicated to covering the Canadian Army.

Find news, features, videos, photos and more.



canadianarmytoday.com



CanadianArmyMag



CdnArmyMag



CanadianArmyToday

Photo: Canadian Forces Combat Camera

EMPOWERMENT THROUGH A NEW ARMY MENTORING PLATFORM



Members of the 2nd Battalion, The Royal Canadian Regiment, during Ex Ares Strike in Latvia in February 2024. Photo: Cpl Bryan Bodo

By Treena Hein

A “sorely-needed, super-positive reinvestment in people” that will lead the Canadian military and its affiliated service members into its best future—that’s how Colonel John Summerfield sees the Canadian Army Mentoring Platform (CAMP).

The voluntary program, which launched in January 2025 after years of development, is anticipated to spread to all Canadian Armed Forces (CAF) branches in the future.

The program is the product of its founder’s early life and career experiences.

“I didn’t have a lot of personal mentoring growing up and that wasn’t a part of the Army culture in my early years,” said Summerfield. “You received some mentoring, but it was always through our chain of command. Going outside of that for guidance or even to talk a situation over was taboo.”

“As I became more and more senior, I started to reflect, and I

realized that changing this situation was what I wanted to be the final purpose in my career. I wanted to ensure that others have a better learned experience than I did.”

In his free time, Summerfield started digging into the best way to create an effective mentoring program. He was soon joined by a friend, Colonel Aaron Luhning of the Directorate of Digital and Army Combat Systems Integration.

“It was a large part of our free time for about a year,” Summerfield explained. “Then we started to get more people on board and got all the CAF branches involved. It became an unofficial program under development, and then official. Everyone has been extremely supportive.”

Mentoring is a powerful tool for personal and professional development. It is a partnership between two people (mentor and mentee) who usually work in a similar field or at least have similar challenges. A mentor

sharing his or her hard-won wisdom and experience not only benefits individual mentees, but also the entire organization, with better leaders, teams and a more positive culture emerging over time. Lessons learned along the way are passed on rather than lost, and both mentors and mentees tend to see enhanced professional and personal competencies, with better engagement and job satisfaction to boot.

Not all mentor programs are alike. The best ones do as described, but poorly executed ones are worse than useless.

“As we looked into how to build this program, we looked into those used in other militaries and in the business world, and we learned that trust must be the foundation,” Summerfield shared. “If trust is eroded, willingness to participate wanes and it becomes ineffective.”

“This is why we went with a total digital construct. There are no other people involved, in the matching or

any other aspect of the program. Just the mentee and mentor. It’s voluntary to apply and it’s up to mentees to reach out. Every step of the process is about empowering mentees. They control how their own self-development unfolds.”

BUILDING BETTER LEADERS

At its core, Summerfield and his colleagues consider CAMP a decision-making and leadership-building tool. The first step is for interested mentors and mentees to fill out surveys, with mentors describing their experiences and mentees describing what they want to gain. An algorithm produces a list of potential matches, with percentage alignments in various areas.

“Mentees can also read a summary of potential mentors, and then decide to make contact,” he said. “We also have resources available to get them started on the right foot, to have a good foundation, as the experience is likely new to both parties.”



CWO Harris of 39 CBG listens to a member of 39 CER on Ex Paladin Response in December 2024. Photo: Cpl Brandon Lin

The intent is to empower junior members.

“They have to take initiative, analyze, make a decision,” he said. “Taking responsibility for your own growth, your own actions, the development of your abilities—this is what builds a leader.”

Trust is baked into CAMP because it’s outside the chain of command. Mentees can feel free to ask questions that they wouldn’t want to ask their supervisor.

As Summerfield explained, one’s boss is, of course, responsible for assessing competencies. But there can be a tendency for bosses to mould underlings into what they want them to be (usually similar to the boss), and to promote them or not promote them on that basis. That “mentorship” might not focus on what the mentee needs or wants in the development of their competencies and experience.

CAMP avoids this entirely. By having the program outside the chain of command, it means that

no matter where a soldier is posted and who their supervisor is, they can form a long-term partnership with a senior leader who gets to know them and provides a steady presence through the years.

CAMP mentors can take up to three mentees if they wish. Summerfield himself is mentoring two already.

“One is currently in the area, and we are just getting to know each other,” he said. “We’re going to have coffee in person once a month and may have contact in other ways. With the other, this mentee is out West, so we are meeting virtually. This junior member wanted someone who was not in the West, to gain a differing regional perspective, among other things. It’s beneficial for me, too, to gain some geographical perspective.”

Early CAMP interest is stronger than expected, with dozens of mentors signing up. With mentees, uptake has been a bit slower, and that makes sense to Summerfield.

“It’s not easy to trust and make yourself vulnerable to people who are more senior, especially in the military,” he said. “We’re going to focus on showing potential mentees that this program makes it not only possible to [trust], but there are so many benefits to gain from it. We’ll stay flexible and dynamic with how to promote CAMP. We have a chain of command but that’s not necessarily the best way to talk about a program that’s outside the chain of command, so we’ll look at other ways.”

“Most of all, we want junior members to know they are in control of the CAMP process, and that it’s a great way to learn and be more successful. We will let the program grow at its own pace, and we expect that down the road, participants will pass on their positive experiences to others.”

Along with strong enrollment, Summerfield and his team have a goal of expanding CAMP across the CAF and National Defence, to both

military and civilians.

“You could be matched with a mentor who is a civilian, and it might be of great benefit to you to have that perspective,” he said. “I have an informal relationship, for example, with a civilian who has human resources insight at a high level. She is a wealth of knowledge, and I often think back to how I could have used all this advice years ago and been better at my job in many ways. I do plan on getting a mentor officially through CAMP when I have some more free time—after this program is really rolling.”

SEEING TO FRUITION

Whenever someone works hard to get a project up and running, there is usually a small sense of disbelief that the dream is now reality. Summerfield is no exception.

“It’s really remarkable to have now launched something that will make such a positive difference

to so many, and to be able to participate in it down the line will also be remarkable,” he said. “I’m very happy to be bringing this to fruition and to see the participation already.”

As the world becomes more complex, future leaders will need to keep pace, he noted.

“Our new people need to be better than we are. Those who become colonels will need to be better than I am now. In a basic sense, it’s out of necessity that we have to offer this program. I believe it’s validating and positive on many levels, and very practical. But it also embodies all the ideals and tenets of the military, like service, honour, duty. It brings into reality the idea that it’s not just about what you do during your career and what you achieve, but what you help others achieve. It’s about making a difference in a positive cascade of investment.” ■

ARMY, RHEINMETALL FINALIZE STEPS ON RECOVERY VEHICLE

By Ken Pole

After several years of industry engagement, the Army will soon have a heavy wrecker on the battlefield.

In November, the Canadian government signed two contracts with Rheinmetall Canada to supply Enhanced Recovery Capability (ERC). Four months later, that process is well underway, the company and the Directorate of Land Requirements (DLR) explained in separate interviews with *Canadian Army Today*.

“There’s always a kickoff a few weeks after contract award, and then a bunch of deliverables in terms of management plans, system engineering plans, quality plans, and so on,” said Mathieu Voghel, vice-president of Programs at Rheinmetall Canada, a division of Rheinmetall AG. “We expect to have all vehicles delivered within the next four years.”

The core contract, valued at \$422 million, is for 100 vehicles—85 under the initial deal plus 15 that were exercised as part of an option. It also includes 24 armoured protection kits. The second contract, worth \$30.4 million, is for in-service support: repair and overhaul, spares replenishment and integrated logistics services for an initial eight years, with an optional extension of up to 16 additional years.

“And yes, training is part of the

acquisition,” said Major Andrew MacLean, the ERC project director within DLR.

The need to replace the current but aging fleet of Heavy Logistic Vehicle Wheeled (HLVW) trucks was formally identified in 2014, following their use during Canada’s 2001-2014 combat mission in Afghanistan.

MacLean, a member of the Corps of Royal Canadian Electrical and Mechanical Engineers who assumed the project lead in 2023, expects first delivery of the new platforms in 2027 and full operational capability later the following year.

The fleet will be fielded in accordance with the Army’s Managed Readiness Plan, he explained. Priority likely will be given to the units preparing to deploy to Latvia at that time, “so they will have the equipment ready” when they arrive.

Before that, however, comes the “down and dirty” aspect of the ERC project—user trials over several seasons at various locations across the Army.

“That’ll be when the community gets its hands on [the vehicles] and provides feedback before they go into full production,” said MacLean. “Essentially, the intent is to test the vehicle, both driving and recovery tasks in various operational conditions and climates.”

The acquisition of the new

“wreckers” is potentially streamlined by the fact that they are based on the HX truck designed by Rheinmetall MAN Military Vehicles, a joint venture based in Munich, Germany. The consortium has a global track record with more than 15,000 versions in service worldwide.

“The recovery variant is fielded with several armies: Australia, New Zealand, and some others,” Voghel, a systems design engineer, said from Rheinmetall Canada in Saint-Jean-sur-Richelieu, Que. While there will be some specific Canadian requirements, “it’s based on some of our systems in Denmark, Norway, Australia, and so on.”

Asked how the rotator-equipped 8x8s will be “Canadianized,” he said Canada’s increased use of containers for moving materiel at home and abroad was a key requirement. Rheinmetall could have supplied a five-axle 10x10 with greater pulling and load capacity, but that evidently was discounted early as the project requirements were being developed.

The increased weight of new platforms was also a key consideration. The Armoured Combat Support Vehicles (ACSV) that are being delivered in eight variants—Troop Cargo, Command Post, Ambulance, Engineer, Electronic Warfare, Maintenance Recovery, Mobile Repair Team, and Fitter/

Cargo—though based on the current Light Armoured Vehicle (LAV) 6.0, weigh about 10,000 pounds more.

“Canada gave us a matrix of vehicles they want the ERC to recover,” Voghel said. The ACSV tips the scales at 20.64 tonnes but dressing it up for a combat deployment balloons that to nearly 28.58 tonnes.

“It was really a matter of understanding the needs,” he said. “It’s definitely capable of recovering ACSVs and, I would say, the ERC itself (about 40 tonnes) will obviously be able to recover another ERC.”

And what about the Leopard 2A4M tank, which tops 55 tonnes? “As far as I know, there is no need or plan [for an ERC] to recover a main battle tank,” he replied. “Rheinmetall did provide Armoured Recovery Vehicles for that several years ago.”

With enhancements to vehicles a continuous part of the sustainment process, Voghel noted there is a “user nation group for HX customers, and Recovery Variant is one of the platforms that’s being discussed. We hope that Canada will join the group so that they can benefit from improvements, configuration changes, and so on. Normally, nations really like to know how other nations use a similar product and how they can benefit from their experience.” ■



Photo: Rheinmetall Canada



Photo: Rheinmetall Canada

LOITERING MUNITIONS DE-RISK FUTURE FIRES PROJECTS



Photo: AeroVironment

By Canadian Army Today Staff

The Army’s mini uncrewed aerial systems (MUAS) units in Latvia will soon be receiving new AeroVironment Switchblade 300 and 600 loitering munitions systems to add to their intelligence, surveillance and reconnaissance (ISR) capabilities.

The Canadian government recently finalized a \$67-million deal with Virginia-based AeroVironment for the aerial precision-fires weapon systems able to strike targets beyond visual line of sight, out to a range of 40 kilometres.

The loitering munition, procured as an urgent operational requirement (UOR), addresses a gap in the Army’s ability to locate, track and strike moving targets, a gap made all the more evident by the lessons emerging from Russia’s invasion and ongoing war in Ukraine, explained Major Amelia Garton, the UOR project director.

“Within the Canadian Army there is a need for manoeuvre units to

have an organic precision indirect fire asset. This will allow better use of fires assets at all levels,” she noted.

“The goal is to prosecute more targets over longer distances than we are currently able to. This gives us a mix of long-range precision fires to enable that goal.”

Among the Army’s considerations for selecting the Switchblade family of loitering munitions over several contenders, was the operational experience MUAS units already have with AeroVironment’s Raven B RQ-11, known as the CU-173, a land-launched, low altitude, fixed-wing ISR system.

Both the Switchblade series and the Raven B will share the company’s Tomahawk ground control station (GCS), a key factor in reducing training time and delivering an operational capability to Latvia.

“Our operators already understand how to use the [MUAS] ground control station,” said Garton, an artillery officer who has served

with the 1st and 2nd Regiments of the Royal Canadian Horse Artillery, and with the Royal Regiment of Canadian Artillery School.

“They understand how to use the simulator that’s built into the GCS. And those Raven B operators also understand the ground picture and the airspace coordination measures.”

Operators can’t use one ground station to control both systems, she noted, but the GCSs share a similar look and functionality.

“To enable the UOR to go quickly and de-risk certain areas such as personnel training and airspace coordination, it made sense to go with technology operators are already comfortable with,” she said. “With this loitering munition the expectation is that the learning curve will be smaller for the initial operators to enable the quick adoption of this capability.”

Through the Canadian Army Land Warfare Centre, the Army is developing a long-term plan for

how loitering munitions could be deployed across the land force. But in the short-term, the Switchblade systems are first being delivered to the artillery and armoured reconnaissance MUAS units because “they understand how to brief ground commanders, they know how to support ground commanders, and they understand airspace coordination measures including operating in the vicinity of crewed aircraft,” said Garton.

For operational security reasons, she could not share the quantity of Switchblade systems. But she said the Army expects formal deliveries to begin in Fall 2026, though initial cadre training will start in Spring 2026. The week-long operator course will be hosted by AeroVironment in the U.S. The short duration “makes it a lot easier to fit into a brigades’ work up schedule,” she added.

The UOR is expected to play a key role in helping the Army develop and refine its tactics, techniques, and procedures for the coordination and employment of precision guided fires, and pave the way for the eventual integration of the future Long-Range Precision Strike and wider loitering munition projects.

“The nice thing about the UORs is that they’ll de-risk a lot of future capabilities,” Garton noted.

In particular, the Army Lessons Learned Centre as well as a Technical Liaison Officer cell in Latvia will be gathering feedback from the MUAS units once the loitering munitions are deployed and answering questions around ammunition storage and other critical details to inform the downrange projects.

“As an artillery officer, it’s a good day to be a gunner when we can increase the fires assets within the Army,” she said. ■

FIELD TRIALS SET PATH FOR NEW OPERATIONAL EQUIPMENT



Members of the MNB-Latvia multinational medical unit during Ex War Horse Forge in January 2025. Photo: MCpl Simon Arcand



A member of the Princess Patricia's Canadian Light Infantry provides security during Ex Resolute Warrior in November 2024. Photo: MNB-Latvia Imagery Technician

By Canadian Army Today Staff

Load carriage fighting rig: Like boots, the vest is one of those pieces of kit that can seem very personal. There is no one-size-fits-all option.

Last fall, the Army conducted a user trial with the 3e Battalion, Royal 22e Regiment (3 R22eR) to evaluate the form, fit and functionality of competing load carriage systems, including ballistic plates, fragmentation armour, vests, pouches and packs.

The trial was done under the umbrella of the Dismounted Infantry Capability Enhancement (DICE), an initiative involving the Directorate of Land Requirements, Assistant Deputy Minister (Materiel), and Defence Research and Development Canada to experiment with options for helmets and modular fighting rigs for light infantry.

The initiative leads into a larger program known as Soldier Operational Clothing and Equipment Modernization (SOCEM), a series of projects to upgrade footwear, all-weather gear, gloves and clothing, as well as ballistic helmets, rucksacks, and patrol packs, for the wider Army.

DICE was separated from SOCEM in 2020 to allow the Army to conduct controlled trials with vendor

equipment, gather detailed data, and purchase smaller quantities for a specific user group—dismounted light infantry battalions—while collecting soldier feedback and experimenting with procurement methods to inform the larger SOCEM initiative.

Helmets were the first piece of equipment to receive the DICE treatment. In the fall of 2023, the team worked with members of the 3rd Battalion, Princess Patricia's Canadian Light Infantry to assess three helmet options under operational-like conditions.

A contract was awarded in February 2023 to Galvion for its Batlskin CAIMAN ballistic helmet system, which received the highest rating from the dismounted troops. That initial deal involved 2,100 helmets and 4,200 helmet covers. In July 2024, the ADM (Mat) exercised an option for an additional 8,400 helmets and 16,800 helmet covers.

Since then, the DICE team completed a further trial with mechanized infantry, which will likely begin receiving the Batlskin CAIMAN later this year.

"We wanted to make sure there were no compatibility issues [in how they wear the helmets]," explained

Warrant Officer Duane Gyuricska, deputy project director for DICE. "We didn't anticipate there would be any, but you want to make sure that you're thorough because you don't want to find something after the fact."

This past November, the DICE team began a similar controlled trial with the Vandoos in Valcartier, Que., for the modular fighting rig, assessing possible load carriage systems that were first screened to meet ballistic requirements.

The trial involved soldiers moving through basic weapons drills, section attacks, advanced to contact, and patrolling, as well as from firing positions with the 84mm Carl Gustaf M4 recoilless rifle, M72 light anti-tank weapon, C9A2 light machine gun, C6 medium machine gun, and C-7 automatic rifle.

The Vandoos also completed the gruelling Combat Force test and a ruck march with all the equipment.

The trial provided soldier mobility and performance data under various weight loads and in different operating conditions.

Among the Army's key requirements for the load carriage system are modularity—the ability for soldiers to customize the

placement of most pouches—and usability. In particular, the DICE team focused on torso sizes and shapes to ensure the kit worked effectively and comfortably for male and female soldiers.

"We don't want people wearing a system that doesn't fit," said Gyuricska. "We want to get away from a one-size-fits-all plate. There too many outliers in [the current system] that aren't fitted properly. And with female specific systems, it's not just different sizes, it's a special cut for female users."

The lessons gathered from DICE about size and fit, especially for women, will be applied to the clothing projects in SOCEM, he added.

"We now better understand the various sizes and shapes of soldiers, and we want to make sure that we're addressing everything properly from the get-go. The more options we have, the better fitting the system will be, and the more accepted. What we don't want is a soldier not wearing kit they are given because they are uncomfortable, or it doesn't fit right."

Another key requirement for the modular rig is the pack's ability to carry what DICE called a non-

standard load without affecting the volume of the bag.

"With our current system, if you have a radio or carry a jerrycan, it takes space in your bag and you [might] leave out other things," Gyuricska said. "What we wanted was the ability for that rucksack to carry something like a sustained fire kit or a radio or a jerrycan, but not lose volume in your bag. We want it so that you can carry those items independent of the bag."

Throughout the trial, the vendors had technical experts on hand to explain their equipment and how best to use it. That was done to ensure soldiers did not rate equipment poorly simply because they did not fully understand how it worked.

While feedback from the Vandoos was positive, there were plenty of opinions to consider as the Army looks ahead to SOCEM.

"That's why we want to go out and do the trials—we value that overall opinion," said Gyuricska.

The first unit to receive the new load carriage system will be the light infantry battalion in the rotation to serve as the Army's next Global Response Task Force, a high readiness unit on standby for Canadian Joint Operations Command.

At the time of the interview with *Canadian Army Today*, DICE did not have a schedule confirmed. But Gyuricska noted that the contract for the Galvion helmet was awarded

three months after the trial was completed in November 2023, and first deliveries followed seven months later.

"This is a more complicated system, so it's hard to say if the timeframe will be that quick," he said.

"But once we've got a delivery timeline, our intent is to marry it up with the next unit deploying and get them trained and working with the vest before they deploy. And if they have questions or concerns, we can address those ahead of time. We want to avoid giving them a system that they're learning overseas. And with this system, I think there is going to be a learning curve."

As DICE nears completion of its

two projects, the team will now shift its full attention back to supporting SOCEM and acquiring the same or similar equipment for the wider Army. The initiative proved its value as a way to gather precise and measurable data as well anecdotal feedback from soldiers, and will inform how SOCEM approaches procurement, Gyuricska said.

"Part of the underlying motivation behind DICE was to use it for lessons learned. We can take DICE and say, 'This worked well for the light infantry, maybe we can use this for the rest of the Army. Or maybe we only need components of that system.' We're moving [that information] on to SOCEM." ■



PROVEN PARTNER

RHEINMETALL
A TRUSTED PARTNER FOR CANADA AND ITS ALLIES

Delivering unique capabilities at home and abroad is and will always remain our top priority.

www.rheinmetall.ca

TAKING RESPONSIBILITY IN A CHANGING WORLD





MNB-Latvia reconnaissance personnel trialling new technology in November 2024. Photos: Combat Camera



Members of the MNB-Latvia on the Counter-Unmanned Aircraft Systems course in Latvia in March 2025. Photo: S1 Megan Sterritt

Modernizing for Major Combat Operations

The Army has gone through periods of modernization before, but “this time it’s different,” Brigadier-General Stephane Masson explains as he begins a lengthy interview. As Chief of Staff, Army Strategy, or COS Strat in military speak, Masson has been tasked with leading a modernization agenda that cuts across the Army’s structure, capabilities and roles.

Modernization is the top priority of Army Commander Lieutenant-General Michael Wright, and Masson has a relatively small window in which to accomplish it. The Army firmly believes that, based on assessments of the rapidly

changing security environment and the actions of peer and near-peer adversaries, it must be ready for a major combat operation in five years.

“I’ll be very clear — and General Wright has said this many times — the Army we have is not the Army we need for the future,” Masson emphasized. Consequently, he and a dedicated team are moving with urgency — “a quick pivot” — to ensure agile, scalable and lethal “option space” for the government.

This is an excerpt. The full interview is available online.

Explain that five-year window. What are the indicators suggesting that’s your timeframe to prepare for major combat operations?

Without going into detail, we’re looking at the two main adversaries that Canada could face or is affected by, and we’re looking at their capabilities and how soon they will have a competitive advantage over Canada and NATO. This is how we define the five-year timeframe that could be a very real or increased threat for Canada. We don’t have a lot of time to re-equip and realign the Army.

What then are the priorities of modernization?

The direction and guidance I received from the Army Commander is to look at three pillars: Review our current structures, look at the capabilities that we have, including people, equipment, training, and sustainability, and what we should consider divesting; and look at the roles of the One Army team—Regular force, Reserve force and the Canadian Rangers. We need to recalibrate who’s doing what in the Army to be relevant and to address the future threats and capabilities that we’re not addressing right now.

How are we going to do that? We have formed a team of teams, and we have selected diverse members of the Army to be part of those. The

Canadian Army Land Warfare Center, led by Lieutenant-Colonel Mike Morin, is responsible to design the future operating concept for the Army in 2040. This document will give us a snapshot of what the world of 2040 could look like—economy, threats, alliances, lack of alliances, climate —and how the Army could be asked to operate. This document will be an aiming mark to design the Army to be relevant and scalable. We’re doing it in cooperation with the allies. We all share the same challenges. The concept will be ready this spring, and this key document will be [widely] socialized.

For now, the main effort resides with Col Marc O’Ray, former Army G3 who is assigned as our Director of Army Modernization, and leading the staff work for the Canadian Army Strategy. Over the last few months, they have conducted 22 senior interviews with retired and serving members to understand their perspective and to learn from the past; 400 surveys across and outside the Army to understand the reality of our soldiers at every level; six working groups; and they have collected over 1,000 pages of data generated by AI using tools that we have available in the Army. This massive data collection is to understand the Army we have—a snapshot of what the Canadian Army is in 2025.

We’ve also done the gap analysis between the Army we have and the Army we need. That gap analysis was very informative. We were able to identify major shortfalls in structure, capabilities and roles. Now we know what needs to be fixed. So now, modernization is to determine what we need to address in structure, capability, and roles.

Given your five-year window, what does the gap analysis point to for the 2030 timeframe?

I would say that for the next five years, we know what we need. We have 49 major capital projects at different stages of maturity, 19 of which will deliver in the next few years. It’s roughly \$8 billion worth of new equipment. This is the largest equipment modernization that the Army has had in 25 years. Yes, we will still have gaps. There are evolving technologies, evolving capabilities that will not be addressed in the next five years, but we’re actively looking at the next round of projects past 2030.

What are the immediate priorities?

Based on the gap analysis, using the three pillars of the modernization, from a structure perspective, we have realized that our current Army structure is not enabling agile force generation. To quote the Army Commander, we



Members of Eagle Company on Ex Eagle Verdun in Estonia in August 2024. Photo: Cpl Marc-André Leclerc



Multinational Artillery Battalion Group members demonstrate the RBS 70 Next Generation anti-aerial weapon in March 2025. Photo: MCpl Simon Arcand

have administrative headquarters that are not necessarily enabling force generation and war fighting efforts. We will streamline command and control (C2). We're going to delegate authorities lower to enable the decision-action cycle, and this will help us to be more agile.

For capabilities, we don't have everything we need to be able to sense, act, protect, survive and communicate on the modern battlefield. While we are delivering on some of the un-forecasted operational requirements for Latvia—air defence, portable anti-X missile, counter-UAS, and dispersed command and control systems—there are other capabilities such as long-range precision strike (LRPS), indirect fire modernization, and everything Land C2, that we need to deliver rapidly as well.

With respect to roles, we discovered from the gap analysis that we need to calibrate the roles of some of our units and components of the One Army team. The Rangers are incredible enablers in their communities, but we need to modernize their role so we can potentially use them as sensors in the North. With the Army Reserves, we're asking too much out of them. We need to clarify their roles, simplify their training and look at developing a mobilization framework to have the ability, on order, to mobilize them at home or abroad.

And for the Regular force, we will build an Army

that will be focused vice balanced, and redefine the force mix ratio between light, medium and heavy forces—we will be bold.

Does that mean a rethink of the mission tasks assigned to Reserves?

Yes. Those have worked in some areas and with some units, but overall, it's not working as expected. We will look holistically at who should do what. One of the things the Army Commander will accept is asymmetry, so we will not have a one-size-fits-all approach. We will look at where we can have success, and where we need to invest to ensure the relevance of the Reserve for our force generation efforts at home and abroad.

In terms of Regular Force structure, is three mechanized brigade groups still sufficient? Or do you need to expand?

We don't have the 100 percent solution yet. We know the Army will grow. Even though we're in a deficit now, we're going to grow over time. So, we plan to expand our Reg force formations. The Army will rebuild to have a warfighting Division capable of operating with our partners in a joint and coalition environment. We're also going to wargame the results of our analysis. We're going to test our future structure against our adversaries, which will help us determine if we have the right

force mix and capabilities. This is a capability offered by the Canadian Forces Warfare Center; they have the toolset to provide the scenario and generate a force-on-force fight, and then give us the result—where we're successful and what we're lacking.

You have a lot of new capabilities—air defence, counter UAS and others—arriving now and in the near future at 4th Artillery Regiment (General Support). How are you approaching expansion there?

I'm an artillery officer by trade, so I watch this space very carefully. The artillery branch will have to expand. Your assessment of the 4th Regiment is correct. They are at capacity now, and there's more air defence systems coming to them soon. We're going to have to consider creating another unit or potentially split them to create a sense unit. This is part of the Army growing. All those key enablers are about to be fielded in the next five years, and we will need to modify our structure for that.

To do all this, you need to reform how you procure capability, and you will need greater industry support to deliver it. Are you seeing those changes?

The Army doesn't control the procurement

process; we're one player among many. As part of the defence policy, there's procurement reform. It's ongoing. The Army has provided our recommendation on how we could potentially streamline the process. In parallel, we have Continuous Capability Sustainment (CCS). And again, the Army has provided recommendations on what projects could benefit from that short cycle refresh for equipment.

This will not be done alone. One thing the Army is doing better now is engaging with industry. We need to have discussions earlier in the process, enable experiments, and innovate, so we can get this cycle faster. We need the support of industry.

What's the ask of industry to help you modernize?

The ask is to integrate early with us. Every quarter, we're going to have engagement with industry, and we're going to explain where we are in the process, what we have in mind, and brainstorm with a view to refining our project requirements. We have formal engagements throughout the year at the CADSI Outlooks, CANSEC, DEFSEC and AUSA in the States, but my goal is to also have Army-only discussions with industry—smaller scale so we can advance the agenda between those major engagements.

Are you also investing in the sandboxes and other venues to experiment with industry?

Yes. The plan is to do it in Canada, but also abroad. The Army and Canadian Joint Operations Command see the deployment of the brigade in Latvia in a multinational environment as a battle lab, a testbed, to experiment and test drive new capabilities and new ideas. All this without disrupting the work of the brigade to deter and defend. This is an amazing opportunity to speed up the learning process, and help us inform future procurement. We'll replicate that in Canada, but Latvia offers us an amazing opportunity.

And to give you a hint of what we have in mind, we're looking at the use of autonomous system or semi-autonomous systems, to find ways to ease how we execute sustainment in a contested environment, deliver ammo, extract casualties. The technology is there, and industry is willing to partner with us. We just need to get started with small steps and see where it leads us.

Expand a bit on your 2040 threat assessment. CALWC has been doing this sort of work for years. Are the foundational pieces already in place to understand and shape your response to future threats?

Absolutely. Our assessment is also endorsed by

and in alignment with our partners in NATO and ABCANZ. Climate change will have a significant impact on us in Canada. The government is asking us to pay closer attention to the Arctic. We have the Rangers, but they're the only permanent, persistent presence in the North, so we're looking at options for how we could have a more active role in the land domain in the North. The threats are one thing, but there's also the power dynamic, especially in the Indo-Pacific. This is not an area of operation where the Army has been active lately. This theatre of operation will require a long and challenged sustainment line. That will have to be more resilient as will our capacity to project forces forward.

What's your major challenge with modernization?

It's to make sure that we communicate widely and in a timely manner. We hear anxious comments ... so we need to communicate. Every month, we have a touchpoint where the Army Commander explains where we are, what was accomplished, and what needs to be done. It's followed by an Army-wide sitrep where we inform on the status of modernization. This is key for change management. We need to pivot into the future, and this needs to be embraced by everyone in the Army. It is ambitious. We have a tight timeline. But we have the best team in place. ■



Brigade Concept

Evaluating the Canadian-led battlegroup under a changing formation

By Chris Thatcher

MNB-Latvia commander issues orders during Ex Oak Resolve on Feb. 22, 2025. Photos: MCpl Bryce Cooper



For the first time on a NATO Combat Readiness Evaluation (CREVAL), the Canadian-led multinational brigade in Latvia deployed the full extent of its current resources, a demonstration of the growing combat power now taking shape.

Exercise Oak Resolve, an intense seven-day training event in late February, marked the first in-theatre CREVAL of the Canadian-led multinational battlegroup headquarters and subunits since the multinational brigade stood up. The task was previously conducted under the Latvian Mechanized Infantry Brigade, heavily supported by the expertise of the Canadian Manoeuvre Training Centre (CMTC).

“Even if it’s a Canadian-led battlegroup, it’s not a fully formed Canadian battlegroup, so we need to look at it a bit differently,” said Colonel Cédric Aspirault, commander of Multinational Brigade-Latvia and the previous commander of 5 Canadian Mechanized Brigade Group.

Oak Resolve is not a Latvian based version of Exercise Maple Resolve, he said, referring to the Army’s previous major collective training event and combat readiness assessment before deployment, held in the sprawling training area of Wainwright, Alta. Where Maple Resolve was a force-generation exercise focusing on the validation of a fully Canadian formed unit, Oak Resolve is a force-employer event focusing on the CREVAL for

the Canadian-led multinational battlegroup that has more than half of its members coming from other nations.

That formation was the primary training audience (PTA), but rather than owning most of the assets and enablers as it had on previous exercises in Latvia, the battlegroup was now operating under a NATO brigade construct with extensive priorities.

“Assessing the battlegroup has changed,” said Aspirault the morning after a long final night in the field. “For me, it was extremely important to expose the battlegroup to the brigade concept.”

Though a battlegroup commander will be well acquainted with all the elements of a Canadian brigade in garrison, “a fighting brigade is different,” he said. “How do all those enablers, all those pieces of equipment that are part of the brigade, support a battlegroup? How do I use my artillery within that concept. For many years, the artillery was in direct command and control of the battlegroup. Now, they are under the brigade, which has multiple battlegroups. All those brigade enablers need to be shared and prioritized, depending on who my main effort is at the time.”

During the CREVAL, every asset in the brigade was deployed to ensure a realistic “bubble” around the battlegroup, “so they could learn and be exposed to the full potential of the brigade,” he said.

That included the newly added Swedish mechanized infantry battalion, which provided a flanking formation as well as members for a formidable opposing force (OPFOR) alongside CMTC's OPFOR team. Other assets included the full artillery battalion, signals squadron, multinational logistics, medical unit, military police, brigade reconnaissance squadron, and the tactical aviation detachment of CH-146 Griffon helicopters.

"We had over 3,000 people deployed and all the equipment that comes with that," he said. "It was an impressive exercise, but also an opportunity to learn and test new concepts."

Operational Context

The overarching scenario of Oak Resolve involved a near-peer resilient and motivated adversary attacking from the north to seize Riga. The battlegroup was tasked with preventing that advance. With the Adazi training area lying to the north of Riga, "it was a scenario that made sense," said Aspirault, as the PTA could be "fully oriented with the map as it would be in real life."

The Swedish battalion, participating for the first time as a member of NATO, and a Latvian battalion occupied the flanks, while a reconnaissance

squadron deployed forward and the multinational logistics battalion supported from the south.

After an initial defensive operation, the battlegroup conducted a passage of lines with the recce squadron and went on the attack. Throughout, the battlegroup maintained a gruelling 24/7 tempo, placing a particular emphasis on fighting at night.

It also faced repeated tests to its ability to handle detainees and medevac realistic casualties, which increased in numbers and complexity over the seven days.

Sustainment, whether food, fuel, ammunition or medical support, was at the forefront for both the brigade and battlegroup every day. If on previous exercises some elements were notional, on Oak Resolve everything was live.

"We wanted to challenge that sustainment cycle throughout, from the front line all the way back to the brigade sustainment area," explained Colonel James L'Heureux, commander of CMTC, which worked in collaboration with the brigade and Canadian Joint Operations Command (CJOC) to develop, design and deliver a realistic force-employer event.

For incidents like casualties, "we were demanding of them to work through the process, from the point of injury all the way back until brigade responsibility," he said.

"That's a great win, because it's not just the [battlegroup] commander that is being challenged," said Aspirault. "Everyone can do their job fully, because there is somebody at the other side that can receive prisoners or injured personnel, or get fuel and rations on time. We really wanted to set the stage with this first exercise and put it at that level right away."

The scenario adjustments and unexpected events that CMTC typically injects into an exercise to challenge the PTA proved unnecessary with the full brigade deployed. Vehicles broke down on their own and real-life incidents generated all the friction and problem-solving needed.

In fact, CMTC and the brigade deliberately avoided following a main event list, said Aspirault. "We really wanted to give the exercise a life by itself."

"It made it very interesting for the battlegroup and for the opposing force, but it created a challenge for my own headquarters as well, because the brigade HQ didn't know the scenario. They had an idea about what we were trying to achieve, but they didn't know what was going to happen."

As a result, he said, "I had to write orders extremely late at night. [But] we wanted to make sure that we were not creating anything artificial. When you spend that much energy developing an exercise at this level, it's important everybody gains from it."

Because Oak Resolve was an assessment of the entire brigade within Operation Reassurance, it did not end with the usual END EX on the final day. Rather, "we decided to write orders to continue the scenario, that somebody else would conduct a relief in place, and the [battlegroup commander] would need to do a real reconstitution, where he would give his area of operation to somebody and withdraw under control to the base in order to be resupplied and reconstituted," Aspirault explained.

"We wanted it to be done within an operational context. We are not on an exercise here, we are conducting operations every day, and by keeping that mindset ... there's no actual end to what we've done—it's just a pause."

Capability Assessment

With Oak Resolved wrapped—or at least paused—and the immediate after-action reports concluded, the task of assessing the entire battlegroup's performance, level of integration, and combat readiness falls to CMTC.

"We'll provide a take home package where we nest the higher level tactical and operational feedback to inform not only the soldiers here, but also the next rotation and the wider Army, to showcase some of those new



Swedish troops during the final attack of Ex Oak Resolve in February 2025. Photo: MNB-Latvia Imagery Technician



A member of the medical team prepares a wounded soldier for evac. Photo: MNB-Latvia Imagery Technician



A CH-146 Griffon door gunner surveys the treeline. Photo: Bdr Maxime Côté

developments, new tactics, and new capabilities, and our assessment and our recommendations going forward so they can be incorporated,” explained L’Heureux.

CMTC had around 80 personnel on the ground, including support to the exercise control, Observer-Controller-Trainers in the field, and it’s dedicated OPFOR platoon, all gathering lessons from both sides of the fight. The Army also had representatives from Director Land Requirements, the Army Lessons Learned Centre, and Army Doctrine Centre doing additional analysis.

Those “sensors” provide the commander with a full picture of how his orders were understood and acted on, and highlight any disconnects in the chain, Aspirault explained.

Among their assessments will be the battlegroup’s ability to access and employ its enablers, or adapt if they were not available. Aspirault noted that since the stand up of the multinational battlegroup in 2017, it has had almost full control over all Canadian and partner assets in the formation, able to deploy where and when needed.

“During the exercise, we played moments where the commander didn’t have access to some of those,” he said. “However, he also had moments where he had way more assets than the battlegroup used to have—helicopters, electronic warfare, and high level ISR assets—because

he was the main effort, and as the brigade commander, I prioritized those assets for him.”

The brigade also made a point of deploying every recently acquired urgent operational capability, including air defence, drones, counter-uncrewed aerial systems, and even a new tactical load carriage vest.

“This is the opportunity to test it, to make sure that we understand how to use it and stress test it in a real [operational] context,” Aspirault said. “This becomes a good battle lab where we can try a lot of new equipment, test different ways to use it, and be disciplined about it—write the right reports and make sure that we learn.”

Though it can be difficult at times to knit together 14 nations within a brigade and nine in a battlegroup, the dynamic is powerful in a training event like Oak Resolve, he observed.

“Integrating all those partners is hard to do at the beginning. However, the gain from it—how we are able to work together—creates a very cohesive, powerful and resilient brigade and battlegroup. The level of expertise and the experience that other countries are bringing is exceptional. When we see that working all together at the end, it creates something unique and something that I personally have never seen before. It’s a privilege to see that as a commander.” ■

The difference is in our DNA.

Rugged. Reliable. Revolutionary. From close quarters to long-range, fixed or variable magnification, optical or digital - our family of ELCAN Specter weapon sights is designed to deliver a decisive advantage in any domain, against any challenge.

Visit www.rtx.com/specter



Raytheon
ELCAN

C4ISR FOR LATVIA

Standing up the brigade’s network to enable survivable command and control

by Chris Thatcher

One of the long-standing challenges with the Army’s Land Command Support System is its ad hoc nature. Sometimes called a network backbone for command and control (C2), it more often resembles a patchwork of multiple networks than a unified spine, and requires creative construction to connect users on exercises and operations.

With the stand up of a Canadian-led multinational brigade headquarters in Latvia, commanding a Canadian-led multinational battlegroup and a Swedish battalion, working alongside a Latvian brigade, all under a Danish-led multinational division, an improved configuration for C2 quickly became an urgent operational requirement (UOR).

Last fall, Major Jonathan Holsworth, the commanding officer of 5 Canadian Mechanized Brigade Group Headquarters and Signals Squadron (5 CMBG HQ & Sig Sqn), laid the foundation for that brigade tactical network, drawing on the experimentation and industry partnerships developed over the past two years by counterparts with 2 Canadian Mechanized Brigade Group Headquarters and Signals Squadron (2 CMBG HQ & Sig Sqn).

The Signals squadron of over 100 personnel arrived to “a lot of equipment and CIS (communications and information systems) interoperability issues with all the nations,” Holsworth recalled in a recent interview. After more than a dozen rotations since the battlegroup stood up in 2017, and the inclusion of 10 other nations in the framework, CIS had become “a beast.”

“It was kind of the island of good ideas and experimentation,” he said of the small Signals teams that had supported the equivalent of a small brigade in recent years. “But interoperability at the sub, sub-unit level and even lower is very difficult from a (voice and data) perspective. It had evolved a bit, some of the CIS equipment went left and right, and TAK (Tactical Assault Kit) was the primary battle management system that they were using, but it was not properly configured or integrated in the vehicles.”

“Experimentation was rampant, which is good, we want innovation and experimentation. But I don’t think the CIS evolved a lot because it didn’t have [the necessary] buy-in or any capital projects that provided support.”

A FRESH APPROACH

Before deploying, Holsworth and the incoming battlegroup commander from 5 CMBG spent months mapping out a plan to streamline and scale the C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) apparatus, in synch with the expanding brigade structure. While not officially a first rotation for C4ISR, they treated it like a “Roto Zero because we were creating a whole bunch of new units.”

The first order of business was articulating the battlegroup’s needs, and then standing up the brigade headquarters and signals squadron with an overarching C2 structure. That meant meetings not only with the deploying Canadian units, which kept expanding as a tactical aviation detachment of CH-146 Griffon helicopters arrived, the CU-172 Blackjack small uncrewed aerial system began operations, and the first air defence capabilities were delivered; but also with the Latvian command team and the contributing nations to the battlegroup: Albania, Czechia, Iceland, Italy, Montenegro, North Macedonia, Poland, Slovakia, Slovenia, Spain and Sweden.

“Creating the overall structure for the two brigades, the division above us, and then establishing ourselves with Task Force Latvia, which provides Canadian support, took time,” said Holsworth.

“A lot of the energy was spent establishing the structures and the command relationships with the NATO chain of command. We did a lot of planning at the secret level just on host nation defence planning, as well as integrating with NATO.”

That included securing land use agreements and movement control when conducting exercises outside the Adazi military base, such as the new 25-hectare training area, Selonia.

Some of the squadron’s equipment was pulled from existing Army stocks prioritized for Latvia. But the CIS UOR project, to be delivered over the next three years, included an initial “surge of new equipment” worth about \$300 million.

That included hundreds of laptops and various CIS equipment that had



MNB-Latvia recce personnel in November 2024. Photo: Combat Camera



Infantry members during Ex Silver Arrow in September 2024. Photo: MNB-Latvia Imagery Technician



Radio check during Ex Silver Arrow in September 2024. Photo: MNB-Latvia Imagery Technician



Configuring the brigade tactical network. Photos: MNB-Latvia Imagery Technician

to be configured, as well as masts, small form factor servers, licenses for Systematic's SitaWare blue force tracking suite, and TrellisWare and Persistent Systems TSM waveform radios.

Much of it arrived in multiple shipping containers and not always in logical bundles. Batteries for example, are classified as dangerous goods and were removed from the laptops; they had to be located and installed before the computers could be distributed.

"We had mountains of equipment in the battlegroup to fix and lifecycle, and then we had a whole bunch of equipment existing in theater that was on the shelf, ready for us to start deploying, like 100 deployable printers," said Holsworth.

Then there were the more basic problems of securing accommodations, workspace, and parking for around 80 LAV II Bisons and LAV 6, as well as the first Command Post variants of the new Armoured Combat Support Vehicles.

"A lot of it was just the logistics of theater activation, deploying our basic equipment and vehicles," he said.

Tactically survivable C2

The Army's operating concept is premised on being adaptive and dispersed. Part of 5 CMBG HQ & Sig Sqn's initial role was to configure the brigade headquarters for remaining connected and able to command while segregated.

The groundwork for tactically survivable C2 was laid by 2 CMBG HQ & Sig Sqn through a series of exercises in Petawawa over the past two years. Led by the then commanding officer, Major Nicolas Gonthier, the squadron proved a scalable concept for a digitized and dispersed command post, integrating edge computing and resilient communications bearers on its vehicles.

The experimentation allowed the squadron to develop its own operating procedures for dispersed C2 while trialing new systems and software from companies already supporting the Army, including General Dynamics Mission Systems Canada, Interop, Ultra Communications, Persistent Systems, Hoverfly, Trellisware, Systematic, Allen Vanguard, L3Harris, Base Camp Connect, and Rheinmetall.

Holsworth, too, drew on some of that expertise through technical assistance visits that included company field representatives, technical liaison officers from Assistant Deputy Minister (Materiel), and industry support from Latvia. "And there was some remote support from Ottawa, especially on the SitaWare suite and how to properly deploy that software," he added.

"SitaWare is the bread and butter. I got to initiate that with the existing resources we had in theater for the first six months. That battle management system is something our allies are using. We [focused] on rolling that out at

the headquarters level for a culminating exercise in November called Resolute Warrior."

While not all the technology trialed in Petawawa has been brought forward to Latvia, capabilities such as a variable height antenna—a Hoverfly tethered drone—have been incorporated to support beyond-line-of-sight communications that are challenged by the high forest canopy in parts of the country. "The pine trees literally eat all comms," said Holsworth.

Integrating the additional artillery capability, such as the Blackjack and air defence, as well as uncrewed systems, in a network was "another realm of complexity," he said. What works for the brigade in garrison with existing structures and lined networks, and what works in the field can be two different things. The squadron had to bridge "air gaps" where often "a lot of these systems didn't speak to each other."

"That applied to all the ISR capabilities," he said. "You have to think about the brigade being a combat ready brigade. We have to divorce ourselves from working from our comfortable areas or our buildings to be able to integrate those systems with our vehicles."

By the start of Resolute Warrior, the brigade had a working tactical network to communicate with the battlegroup and with higher headquarters, using "the Canadian provided systems and laptops," Holsworth said.

The next step for the current rotation from (5 CMBG HQ & Sig Sqn) is connecting the battlegroup to dismounted soldiers through the Integrated Soldier System (ISS) suite. The Army is still in the process of introducing the Baseline 23 communications suite, formerly known as CP TOPAZ, into the LAVs. Once completed, it will connect vehicles to soldiers' ISS.

Building a tactical network a few hundred kilometres from a border with an adversary generates its own challenges, Holsworth acknowledged.

"We were aware that we were being observed. We constantly had drone sightings, and drone control in the area is high."

Holsworth previously worked with the Directorate of Cyber Operations Force Development, helping design the workforce and overall structure that in September 2024 became Canadian Armed Forces Cyber Command, so the squadron emphasized security protocols, cyber hygiene, and best practices with the use of cell phones.

"It's a different environment," he observed, "and a lot of our leaders are from the Afghanistan era ... It's not the same reality as in Afghanistan. It's a way different counter [to threats] and a different level of stress on soldiers."

That required a change in mindset about security, something Ukrainian soldiers have readily shared. "Ukrainian soldiers have the discipline now to not take their cell phones to the frontline, they keep them in the back or on airplane mode. We're trying to instill that culture in Canadians." ■



Training simplified, performance amplified.

At CAE, we deliver integrated training solutions that adapt to evolving operational requirements. Our solutions connect technology, people, and platforms, ensuring personnel can excel in highly complex environments.

cae.com

Ready today.
Prepared for tomorrow.

CAE



4th Artillery Regiment (General Support) initial cadre training on the RBS 70 NG. Photos: MWO Stephane Gauvreau

The multi-phased approach to air defence

by Chris Thatcher

What was once a singular project to acquire a ground-based air defence system has in recent years become a multi-phased approach to resurrect a capability deficient in the Army since the last air defence anti-tank system (ADATS), an Oerlikon-built turret mounted on a M113, was divested in 2012.

“It’s been a long time since we’ve had air defence,” acknowledged Major Matt Becker, project director for Ground-Based Air Defence (GBAD). “After such a long period of having nothing ... it’s like a rebirth of air defence.”

At the front end of the effort is an urgent operational requirement (UOR) to get a capability to the Canadian-led multinational brigade in Latvia as quickly as possible.

In February 2024, the government awarded

a \$227 million contract to Saab for the RBS 70 NG, a very short-range system that includes the firing units, missiles, transport vehicles, training and support.

Since then, a training simulator arrived in Gagetown and two serials of gunners from the 4th Artillery Regiment (General Support) underwent initial cadre training in June and October 2024. A third serial began this March, as did training for the weapon maintenance. Moreover, the RBS 70 NG has begun arriving in Latvia and the Army expects to declare initial operational capability in May.

“It’s on track,” said Becker, an artillery officer with a background in surveillance and target acquisition projects.

“The first troops (from 4th Regt (GS)) have

already arrived and the main body is about to deploy. Soon we’ll have a deployed operational capability for air defence, which is a big deal because ADATS was divested over a decade ago and we’ve had nothing since.”

Following closely on the heels of the UOR is a three-phased project to deliver GBAD. Like the UOR, the first phase will provide a capability to the brigade in Latvia in short order. Known as Uplift, this first project is the result of a change in the procurement strategy that saw more funding injected into the budget last September to rapidly acquire a military-off-the-shelf (MOTS) SHORAD/C-RAM (counter rocket, artillery, and mortar) capability.

“A lot of the work in the last year has been centered around enabling that,” Becker explained

during an interview between visits to potential suppliers in the United States and Europe.

“We’re currently targeting November 2027 as a delivery date, and we’re in the process of industry engagements right now. We’re hoping to get a request for proposals (RFP) out later this year, with contract award in 2026.”

The SHORAD/C-RAM system will be operated by 4 Regt (GS), which is preparing to stand up a battery in 2026 to then deploy to Latvia.

The next two phases of the project, appropriately named Enduring, comprise the original GBAD project that has been progressing slowly but steadily since dedicated funding was allocated with the government’s 2017 defence policy.

The scope of the original project included acquiring one battery of SHORAD/C-RAM and one battery of very short-range air defence (VSHORAD). Those are now being procured in two

separate phases, known as Enduring Phase 2 and Enduring Phase 3.

Because all three phases of GBAD are being openly competed, the project is accepting some risk, Becker acknowledged. It’s possible the SHORAD platforms for Uplift and Enduring Phase 2 could be different, as could the VSHORAD systems for the UOR and Enduring Phase 3 – meaning the Army would have to support multiple training, maintenance and parts supply chains.

“That’s a risk that’s been assumed,” he said. “Each one is going to have its own RFP, and there are multiple OEMs [original equipment manufacturers] bidding on each of these.”

The aim is to acquire similar SHORAD capabilities for both Uplift and Enduring, but the first project will accept a “viable, ready to go, operationally proven system” for immediate deployment, while the later will consider a fully Canadianized integrated solution.

“Overall, the prospective ORBAT [order of battle] that we’ve developed is for a similar capability, one just much faster and with more military off-the-shelf elements than the other,” said Becker.

There are several possibilities for the VSHORAD system for the Enduring project, but one option is a vehicle-mounted launcher on a LAV or similar type platform, he said.

Becker steered clear of specific manufacturers and platforms, but said the competitive process attracted multiple OEMs for both SHORAD and VSHORAD capabilities. In 2023, the project office issued an invitation to qualify (ITQ) through Public Services and Procurement Canada. Four qualified bidders were accepted, but the ITQ was canceled when the procurement strategy was revisited with the government’s 2024 defence policy update.

The four bidders along with a fifth manufacturer will participate in a limited tender for Uplift later this year.



An Air Defence Anti-Tank System (ADATS) being prepared for conversion to a monument in April 2025. Photo: Matt Becker

TOMORROW'S TECHNOLOGY TODAY.

Solutions that are proven and ready to meet Canada's timeline, capability needs, and industrial benefit requirements.



K9 THUNDER
Self-Propelled Howitzer

K10
Ammunition Resupply Vehicle

Mandatory Requirements

GBAD was underway well before Russia's invasion of Ukraine in February 2022, but the lessons of that ongoing conflict have reaffirmed the importance of air defence. While the scope has changed with the addition of the Uplift battery, the mandatory requirements remain similar, said Becker, who has served in Director Land Requirements over multiple postings including on projects such as the AN/MPQ-504 Medium Range Radar (MRR) and the CU-172 Blackjack Uncrewed Aerial System (SUAS).

"We're not changing what we're looking to counter," he said, "we've just changed the method for what we're getting and when."

"The systems are quite complex, especially the SHORAD systems, but they usually consist of sensors paired with the weapons platforms that allow the operator to detect air targets, make informed decisions on whether to fire on the target, and if needed, release the weapon to intercept the hostile air threat in accordance with our threat set."

The integrated system of sensors and effectors is intended to defend against threats from rockets, artillery, and mortar munitions, air-to-surface missiles and bombs, close-air-support aircraft, Class 1 small and 2 uncrewed aerial systems, as well as planes and helicopters.

It also carries a requirement for defence against cruise missiles that may be modified by industry feedback. "It might not necessarily be all cruise missiles, because that is a fairly large range of threats," Becker admitted.

To ensure a high level of tactical mobility, the Enduring phase will need to lean on existing vehicle projects such as Logistics Vehicle Modernization as well as potentially additional platforms to equip a battery with a fire control unit, reconnaissance elements, support vehicles, and ammunition vehicles. The process for how all of that will be evaluated "is well into development," he added.

A multi-million-dollar air defence system can seem like swatting flies with a sledgehammer, especially in a battlespace like Ukraine where

modified low-cost drones are ubiquitous. Becker raised the cost-benefit analysis of munitions versus defended assets, and noted that the Army's two counter-UAS projects, one an urgent operational requirement for Latvia, will contribute to a layered defence against aerial threats.

"Everyone is going to be bringing their own capabilities to the table, and they'll be allocated and utilized in accordance with what the commanders on the ground and what the Army deems optimal," he said.

The GBAD projects are not only a top priority of the Army Commander, but they are also a long overdue capability for gunners.

"We don't have a lot of the old air defenders left," Becker observed. Two members of his project team worked with ADATS, but for most, it will be a new weapon in the toolbox.

"The Army has made it a very high priority; there's funding and the will behind it. So, we're all excited, working hard to make the essential capability of air defence a reality again in the Canadian Forces." ■



K30 BIHO
Air Defense System



CHUNMOO
Multiple Rocket Launch System



REDBACK
Infantry Fighting Vehicle

HOT TAKE

WITH THE ARMY SERGEANT MAJOR

Call it an airborne mentality, a sense of confidence and purpose that comes from strapping on a parachute and jumping into the unknown. As a young member of Canadian Airborne Regiment, Chief Warrant Officer Christopher Robin fed off that perception of exceptionalism. It shaped him as a soldier and helped build resilience.

“We were really focused back then [with] a warfighting mentality in the regiment,” he recalled. “As an airborne commando, nothing stopped me.”

With modernization the top priority for the Army Commander as the Canadian Armed Forces adapts to a rapidly changing global security environment, resilience and purpose will be important qualities for the Army Sergeant Major (ASM). As the voice of the rank and file, the ASM often serves as a vital relay to the commander for how change is being accepted and incorporated.

Robin was appointed ASM in July 2024 and brings a breadth of operational experience from Somalia,

Bosnia-Herzegovina, Haiti and Afghanistan, serving with all three battalions of the Royal 22e Régiment, the Canadian Manoeuvre Training Centre, 4th Canadian Division, Chief of Military Personnel, Canadian Special Operations Forces Command, and Vice-Chief of the Defence Staff.

But he credits the Airborne Regiment with providing the formative step in his career – parachuting – in which he ultimately became a subject matter expert and instructor at the highest levels in static line, freefall, canopy control, HALO (high altitude, low opening) and HAHO (high altitude, high opening) jumps.

While Robin did not initially consider the military as a career while in school, he has become a recognized leader at unit, formation, division and command levels. He spoke with Canadian Army Today about soldiers’ concerns as the Army scales up a multinational brigade in Latvia and embarks on its largest modernization effort, including a review of its structure, in recent history.

What was it about parachuting that attracted you?

There’s a level of danger. [But] you build that confidence with the one who checks you, with the pilot flying the aircraft, with your job on the ground, which [happens] as soon as you hit the ground. You’re on hard timings right away. You have a mission, individually and collectively, but within an organized group. It takes dedication. You have a sense of purpose. For two years I was part of the reconnaissance or Pathfinder platoon in the airborne regiment. Everybody had a specific job ... you felt that. If I had to be on that target or on that cutoff point or raising a panel marker for somebody to jump in, you’re a key player. It gave you a sense of belonging.

Was there a defining posting?

I think my most defining posting was Afghanistan, my first tour in 2007. As a platoon warrant, you are kind of the father figure to the platoon members and the spouse to the platoon commander, if you will. You’re a pretty big role model. Everybody’s looking to you when things go sideways. And things went sideways. That was the best time in my career, that and being the RSM of a battalion, and now the Army Sergeant Major. Platoon warrant is what shapes you. You don’t wish to go to war, but when you are there, you’re excited because you’ve trained for it: Let’s put everything together and hope it works. I think that [experience] defined me and kept me going forward. We lost people; we dealt with situations. And being able to deal with those situations, expected and unexpected, is kind of a checkmark in your career: Done that, and I know I can do it well.

How do you define your role?

It is all my experience from when I was a private to today. The commander has his advisors; he has generals advising him. But he needs my no BS opinion on certain things. What’s the pulse in the Army? That’s where he needs me the most. I’ve served in times where funding was not good, I’ve served in times when the military was not well perceived, I served in times when the military was at its highest in the eyes of Canadians. The CWO or the ASM can be intimidating, but people still feel connected to the Sergeant Major of the Army. They will open up to me. There’s a sense of trust, and I think that’s what [the commander] appreciates. It’s something he can build on.

What I like about [LGen Wright], I’ll give him my opinion and he won’t take it. He might say, thanks, but we’re not going that way.’ And that’s all right, because we can think differently. Even if I give him some advice that he doesn’t really want to capitalize on, and doesn’t always take, he knows that if the ASM is thinking that way, that means other people are probably thinking that way. It gives him a bit of perspective.

In that vein, you’ve visited troops across Canada and overseas since taking on this role: What are soldiers telling you?

We just returned from Latvia where the majority of our latest equipment is, where the newest technology is, where soldiers get to train with it and with allies. But what I hear is that they still don’t have all they need, that some equipment is broken. They don’t have the parts when they’re supposed to, they’re uncertain about ammunition. And if a soldier there, providing deterrence but ready for other actions, if necessary, still feels that they don’t have what they should have, that’s a concern.

We know that soldiers in Canada, at the moment, don’t have all they need when they train; we have pushed a lot of that equipment to Latvia. But in Latvia, a mechanic is saying, ‘I can’t fix a vehicle [because] we don’t have the parts, they’re coming from [a manufacturer] in Germany, but they have to first go to Canada and then take a boat back over here, because that’s how we do business.’ We are not effective when it comes to breaking a mold. We’ve been saying [we’re committing capability] to Latvia for a while now, that Latvia will have it all. Well, they still don’t ... and now they’re questioning.

That’s where my role as a communicator becomes critical. If I sit with them and say, yes, it’s bad, it’s awful, they’ll lose total confidence. So, I need to stay positive. But those are key messages that the boss has to know about. We have excellent soldiers, but we still don’t have enough vehicles, we still don’t have the parts to repair the vehicles, we still don’t have all the personal protection equipment that we should, we don’t have enough compasses for everybody wearing GPS, or enough ear protection and ballistic glasses that work. When we don’t have that, soldiers ask why. They rely on us, and we want them to know we share the same frustrations about the slow delivery of equipment. It’s important we keep providing regular updates so they know these deficiencies are being addressed on an ongoing basis.



Members of Eagle Company practice trench warfare drills during Ex Eagle Verdun in Estonia in August 2024. Photo: Cpl Marc-André Leclerc

Beyond equipment, what's the top issue that you typically hear?

Cost of living. I think that's the one that's affecting people the most. Groceries, housing – will young people ever own a house today? Maybe, eventually. It used to be that when you were posted somewhere, there was a house for you, shopping facilities close by, schools and daycare, a hospital 24/7 on the base. Today, we don't have that. Support is not how it used to be. We tore down a lot of houses because we weren't using them.

Also, the insecurity [that comes with] a spouse losing their job when you move. We force people to move. We want people to move for good reasons – if I had only lived in one area or one sector, it would be hard to understand the rest of Canada and Canadians, so [different postings to different regions] has been important in helping me be able to give good advice and come up with good ideas. But the cost and uncertainty of moving from one province to another, and the language barriers or other restrictions that can come with that – sometimes it's very difficult.

To read social media and other media reports, morale is low. Is that your perception?

When people go on social media, often they vent, so some may conclude that morale is low. But having come from Latvia, having been in the UK seeing our troops train Ukrainians – they are loving it. They feel that they are part of something. They're training people with everything they've got. They're not holding anything back ... and it's humbling.

They might be unsatisfied because of [a lack of some] equipment, maybe because of certain living conditions (in Latvia some are in hotels, some in houses, and some living on base). But they don't complain because they're on a mission ... they've got a job to do, and they're enjoying it. They're learning at the same time, building relationships with the allies, with the Ukrainians, which is critical today.

Given the current economic and political climate, are you getting questions about the U.S.-Canada military relationship?

Yes, they're asking us directly: What is going on? Where do we stand? I'll tell them, we are maintaining a relationship. I have an agreement with the Five Eyes community, all the Army Sergeant Majors, to speak every two months. We agreed [to that] before the recent U.S. elections. We agreed that whatever happens at the political level, it's not our business. We stay aware of what is going on, but our business is to make sure that trust is maintained at the troop level, because we are partnered in pretty much everything that we do. We know that Canada is not going to lead something without the support of allies. So, it's important to maintain those relationships.

Are Reserve members bringing forward unique issues?

Oh, very. The Army Reserve is still soul searching, if you will, and so are we, for the Reserve Force. There are two things: Reservists face issues with pay when they deploy. There's a gap in our pay system. Somebody could go up to three, four months without getting the proper pay or pay adjustment when they deploy. This is not fair. If it's a six-month deployment, it's actually [longer] for a reservist because they have to leave their civilian job earlier [because of the readiness training].

Also, I would say part-time Class A reservists are doing way more work. A lot of them have supervisory roles, so if they're working a day, it takes them another day to get things ready or prep a training session. There is some misunderstanding or maybe unfairness in how they are committed to work; they are not paid for the extra time that they're putting in. We want part-time soldiers to work part-time. We don't want them working full-time unless they are on a specific contract to do so. But sometimes we're imposing things where they have to put in extra time ... so we have to look at what we are asking of our reservists.

As part of the Army's structure review, I gather you are assessing how you're employing reservists, including the mission tasks that were assigned several years ago.

I think the restructuring as part of the modernization work is going to help us define how they should be employed. Should they be a domestic operations [force] only? Should they be an augmentation of 20 percent of the Regular force? Could one section out of three in an infantry battalion, let's say, be reservists? Should they be deploying overseas? We learned that mission tasks are probably not appropriate, or at least not across the board for certain organizations. We came to realize that it's very hard to force-generate them.

Geography is also an issue. In some parts of the country, it can take some reservists a full day just to reach a training area. If they only have a weekend to train, that means they're travelling for two days. We want our reservists to be everywhere, but then we don't have opportunities for them to train properly.

The one thing that we know for sure is that the Army Reserve is critical to the One Army team. We need them. We are too understrength not to have a Reserve component. That restructure is going to be important.

What is your role with retention? Given the conversations you have, you probably have some sway.

I will help Chief of Military Personnel in establishing priorities so that we can help them collect some data. When I'm speaking to people, I remind them why they joined the Canadian Armed Forces and why they chose the Army in particular. I think people quickly forget. It can become, what's in it for me. But that's not why we joined initially. We joined because we want to serve Canadians. I remind people that we have a lot of soldiers on the frontlines, even if it is in support roles, on expeditionary and domestic operations. We're there when things are not beautiful; that's when we step up ... My message when it comes to retention is mostly reminding them why they joined. It's not always going to be roses.

Related to modernization, what from your perspective needs the most urgent attention?

Out of (LGen Wright's) priorities, I think the biggest one is what we bring to the table. For the longest time, I think we've had a very good Army but maybe underequipped. The quality of soldiers has been there, and we've earned a good reputation among our allies for who we bring to the fight, but what we actually brought to the fight [was not]. With modernization, what we'll bring will probably earn us a big pat on the back – highly skilled soldiers working with the latest technology. That's also a motivator, bringing in the right equipment so that people have a purpose. Our tankers right now – it's great to be armored if you're out West, but if you're out East, what are you doing? Getting the right equipment will give people purpose and it will give Canada a greater identity. Our allies will see, yes, Canada, it's not just the quality of the soldiers they have, its also the capability they bring.

A final thought?

When I first got into this position, it was intimidating, but the commander had a vision, which was reassuring for me; it provided a way forward that we're all collectively working towards. If his priorities weren't defined as clearly as they are, my job would be a bit more uncertain. But I realized that I needed a set of priorities for myself that coincided with his. And I kept mine simple: Discipline, healthy choices, and respect.

If you look at modernization and the Army of the future, discipline will still exist. There are certain things that we don't want to change. For me, discipline is the start of everything; it's the backbone. If we're an undisciplined Army, that's when we make bad decisions, we don't work well under stressful conditions, there's misconduct, and there's a lack of trust. Discipline goes a long way to enforcing that.

When I talk about healthy choices, it's about a healthy soldier. It has to do with food, with mental health ... When the body is unhealthy, it is a lot harder to fix. As I've aged, I don't eat the same way I used to, I don't train the same way, I'm not as strong, I'm not as fast, and I break easier. So, I've adjusted how I train, how I eat. A fit body makes a fit mind, and a fit mind is a healthy person. And a healthy person is what we need for longevity.

And respect: We have our ethical principles, we're multicultural, and we need to respect the person [with whom] we're working, in the same trench, in the same vehicle, in the same cubicle. It's important because cohesion is what's going to keep us tight. If not, we'll crumble. Respecting each other means getting to know them ... [and] being willing to step up and support them. I try to remind people that respect [means] creating work environments that are healthy. If all that comes together, then everybody performs, everybody's healthy, everybody's disciplined.

Forty-thousand people with their own identity, with their own objectives, is not going to work for the commander. Be as individual as you can, but you still must be able to work together for the same objective. That's my biggest message: When the commander says the Army of today is not the Army that we'll need tomorrow, my priorities will still exist in the future. And if people forget about them, which some do as they grow through the ranks, like serve Canada before self; if you forget that, you might show up late, you might not show up properly dressed, you might not care about certain things, you might find excuses. But if you remind yourself that you're serving Canada before self, you'll be there when the bell rings. As a profession of arms, we are different, we salute people, we have that respect for rank, and we should own that, we should be proud of that. And as long as it is respect from top to bottom and bottom to top, we've got something. ■



CWO Christopher Robin in conversation with Cpl Reese Rahman (right), and LGen Michael Wright (left). Photo: Bdr Albert Law



A member of the MNB-Latvia during Ex Shield Strike in January 2025. Photo: MNB-Latvia Imagery Technician

Intelligence tactical training with

by Chris Thatcher

For the first few years of its existence, the Canadian Army Intelligence Regiment (CA Int Regt) faced a training paradox: To generate the data to fully test its burgeoning abilities, it needed to participate in a major combat operations scenario, usually in a brigade-level context. But when such training events were run by other organizations like a Canadian Mechanized Brigade Group (CMBG), they typically focused on the manoeuvre elements of the brigade, and not always the specific requirements of the Regiment.

Created in 2015 as a unit dedicated to delivering ground intelligence to meet operational and institutional requirements, the CA Int Regt conducted much of its initial collective training as an enabler to one of the three CMBGs in exercises such as Unified Resolve and Maple Resolve, collecting and contributing actual and notional intelligence to a commander to meet battlefield objectives.

Though valuable experience, especially for young intelligence practitioners learning the nuances of working under higher headquarters and how intelligence supports units and formations, such exercises did not provide a true test for the Regiment's capabilities. Even in theatres such as Operation

EASE

Impact in Kuwait, responding to real-world events and requests, the experience fell short of a mission where intelligence personnel would be inundated with allied and national collection capabilities supporting force protection and targeting.

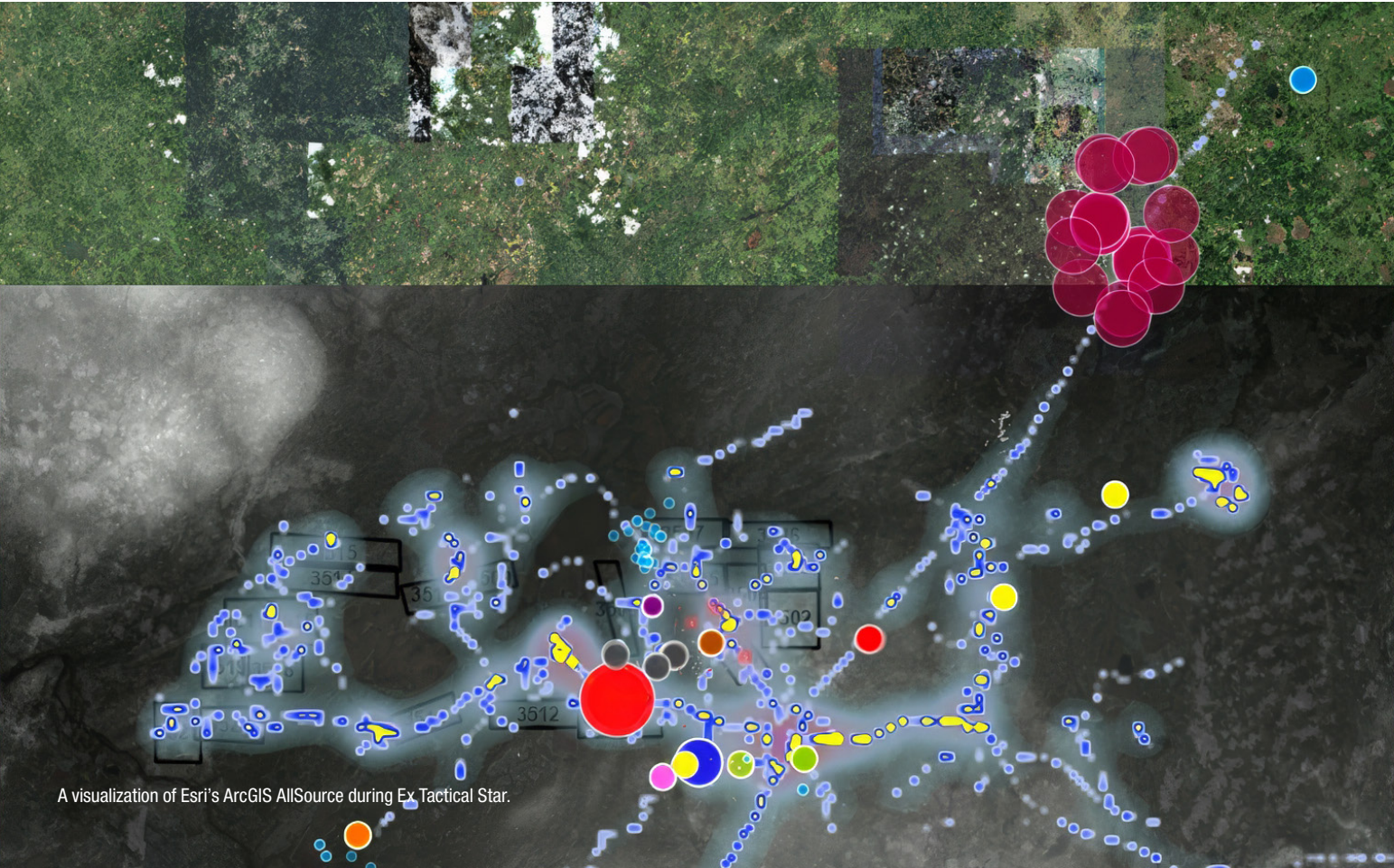
So, like many units across the Army, the Regiment has turned to technology and industry support to solve that problem. "Training intelligence teams at the tactical level is an enormously challenging thing to do," observed Lieutenant-Colonel Neil McPhedran, the Regiment's commanding officer (CO) as of July 2024. "What we expect of our junior officers and soldiers is often what officers get exposed to on the Army Operations Course as a senior captain."

"Our purpose as a Regiment is to force-generate intelligence teams for operations at the tactical level. This new technology has let us maximize reps and sets that are aligned with intelligence battle task standards and training requirements, without having dependencies on higher echelons or access to a theatre."

The Regiment's need for more immersive training is driven by the proliferation of sensors throughout the battlespace. The previous CO, Lieutenant-Colonel James Black, sought to solve that by creating a sandbox



Members of the CA Int Regt at the end of a field exercise.



A visualization of Esri's ArcGIS AllSource during Ex Tactical Star.

in which intelligence teams could trial and master new technology and tools. Together with the Canadian Army Simulation Centre (CASC), also located in Kingston, the CA Int Regt developed a synthetic training environment in which to conduct its own training. The first exercise in the synthetic environment, Rising Star in May 2023, successfully replicated all the sensor types and inputs operators would expect to see, but it also proved to be manpower intensive. "We had a sea of contracted support, a week-long writing board, a development conference, and a week-long exercise," recalled Major John Makela, the Regiment's exercise director. "We spent about \$500,000 for what was effectively an intelligence section attack. It was great training for the troops, and we did create all the inputs with that effort, but the backend was completely unsustainable." Six months later, in November 2023, the Regiment conducted Exercise Tactical Star, again employing its synthetic training environment, but using more automated systems and processes to reduce the human component required to simultaneously manage an enemy division and the operations cycles of a blue force brigade. The central system to that success was an exercise development program called EASE, created by an Ottawa-based company called H2 Analytics. "[EASE] allowed us to automate a lot of stuff and for the first time to begin generating realistic sensor data," said Makela. "For INT (intelligence) folks, that is important, getting beyond just hearing radio chatter or receiving Word docs and reports. We were able to generate sensor data like GMTI (ground moving target indicator) radar tracks and ELINT (electronic

intelligence) emissions—data that is reflective of exactly what is happening inside the simulation." During Tactical Star 23, EASE generated 250,000 individual data points and around 1,400 reports. Prior to the exercise, the Regiment changed its simulation program from Joint Conflict and Tactical Simulation (JCATS) software, ideal for battlegroup level training, to Raytheon's Advanced Battlespace Computer Simulation System, or ABACUS, more suited to simulating division and brigade events. It also invested in better tools, including Esri's ArcGIS AllSource, a powerful software built for intelligence analysts to integrate data, perform analytics, and produce actionable intelligence, and ANVIL, a program aided by modern data and visualization algorithms to automate the synthesis and analysis on massive volumes of data and identify linkages. "That became the integration point where we started taking in the live sensor traffic and all the other sensor traffic so that the INT team could begin to work far faster and more efficiently," said Makela. "We had gone well beyond what a human could actually ingest in terms of data that we're pushing at the training audience. From there, we've just continued to iterate." That evolution brought in Command: Professional Edition, a cross-domain wargaming simulation program to replace ABACUS, and saw the number of support contractors decrease from over 30 on Tactical Star 23 to about five for an exercise in January 2025, even as the data points jumped to over a million and the reports climbed to 7,000 for a 14-hour training event. "And it's all 100 percent accurate," noted Makela. "You're not changing the date and title of a report and trying to keep everything coherent. If you see that report, that report just happened in the sim. If you don't have a

sensor looking at a spot, you don't get a report. Everything makes sense and is linked into the exercise, which means that all the suspension of reality and disbelief that often happens is gone."

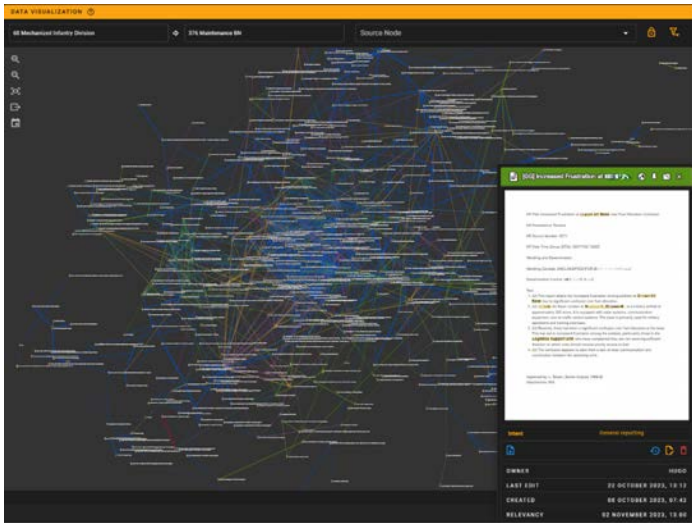
With EASE, the Regiment will soon be able to run detailed yet specific training for small teams and even individuals in house, McPhedran suggested.

"We could get to the point where a section commander is designing a micro exercise to get after a skill that's been under-trained or they had issues with previously," he said. "It's come huge steps. I think we're getting close to being able to capture all the data and then be able to rerun portions of it to train battle task standards that we're maybe having trouble with. The more we can push this down in support of training at all levels, the better. Because the reality still is that most of our soldiers are only seeing this on two exercises a year, which are each two weeks. Ideally, this is something just internal to company lines that we can maximize year-round."

Realistic input replication

H2 Analytics was founded by Hugo Hodgett, a former reservist with Army intelligence who served with 3 Intelligence Company in Halifax before joining Special Operations Forces Command and later Communications Security Establishment Canada.

The company first appeared on the Army's radar in 2022, he recalled, but demonstrated its true value with Tactical Star in 2023 when it was integrated with CASC's existing simulation capabilities.



An EASE data visualization during Ex Tactical Star.

"That had never been done before," he said. "The modern intelligence battlespace is very data centric. It's high paced and there's a significant number of sensors. Being able to generate the data inputs to be able to train intelligence analysts and validate their tools was a huge leap forward. They had previously never had the amount of data that you would need to validate

whether those were the right tools for the job."

That included simulating classified sensor suites that previously were not available to an intelligence training audience, Hodgett noted. "We operationalized those."

In addition to EASE, H2 Analytics provides software connection, ensuring tools like ArcGIS AllSource, ANVIL and Tactical Assault Kit (TAK) can work with and share large amounts of data. That, in turn, ensures training with that volume of information can be delivered independently at unit locations to the smallest formations, what he equated to a small arms trainer for intelligence.

"What we are trying to do is democratize training so it is available to all subunits on an on-demand basis," said Hodgett, "... [so] that by the time they get to a major training evolution like Tactical Star, they have been through all of the processes, they have seen these problems before, they have seen these kind of data sets before, and they understand how to employ them and their tools."

Critically, EASE can generate "outputs that look and feel like what an intelligence team would expect to see across a wide range of disciplines for contact reports to national level capabilities," said McPhedran, adding that the program itself is invisible to the training audience. In the computer-assisted training of Unified Resolve or in a field exercise like Maple Resolve, many of the data inputs and outputs are notional and lacked the realism now available.

"I think many people's only experience of doing their job for real was on operations where that collection is actually happening," he said. "Now we

can maximize our time in garrison and put our soldiers in situations that look a lot like what we anticipate future operations to look like," including hybrid warfare and information warfare.

"We've really been able to buy down a huge amount of risk," McPhedran acknowledged. "One of my greatest fears as the CO is that we might deploy people and ask them to do things that we could have prepared them for but didn't. I think this is the first time through this that we've been able to create a scenario or circumstances where there's no reason people can't be getting the reps and sets needed to master the skills required of them."

"In times past, it was often frustrating for NCMs because intelligence staff perceptions were that our outputs were tailored and predetermined in order to achieve the manoeuvre requirements as opposed to truly testing the INT function," observed Chief Warrant Officer James Pope, the Regiment's Sergeant Major. "Now, we're training intelligence professionals on intelligence tradecraft, at speed, at volume—what's demanded in a modern warfare setting, which really can't be replicated without two armies clashing at this point."

McPhedran's aim is to take the tactical exercise from twice a year in garrison to the field, where the Regiment can test its capabilities while at the same time "training the fieldcraft skills needed to both survive and prevail on the modern battlefield."

"It's already been a huge paradigm shift, but I think there's still a lot of runway to continue to maximize how often we're using it in different scenarios," he said. ■



CA Int Regt members on Ex Rising Star.



ArcGIS All Source, a powerful desktop software built for Intelligence Analysis.



- Integrate data from multiple sources
- Visualize data and perform advanced analysis
- Produce and share actionable intelligence



TANK CENTRALIZATION:

A bridge to the Army's future armoured capability

By Allan Joyner

The Canadian Army is undertaking a significant transformation of its armoured capability through the centralization of its Leopard 2 fleet. This strategic initiative, linked to the recently awarded Long Term Support Contract (LTSC), aims to ensure the operational viability of Canada's main battle tanks until 2035, at which point decisions regarding the future of the Army's direct fire capability will be determined.

According to Lieutenant-Colonel Allan Dwyer, G34 Operational Fleet Authority, the primary motivation behind this reorganization can be distilled to a single word: effectiveness.

"If you spread that asset too thin across the whole country, then the number of tanks that you can get together for any type of exercise or NATO employment is reduced," he explained. "If you can

consolidate them and manage the fleet in a more holistic fashion, you can provide a bigger bang for your buck for the government and for Canadians."

This consolidation acknowledges the reality of Canada's relatively modest tank fleet and optimizes its collective utility by concentrating resources rather than dispersing them geographically.

The centralization directly addresses one of the perennial challenges of armoured force maintenance: the "ebb and flow" of vehicle availability. Main battle tanks require regular maintenance cycles and inspections, creating a constant rotation of vehicles moving in and out of operational status. By consolidating the fleet in Edmonton, Alta., the Army can better manage this maintenance cycle while maintaining a critical

mass of operational vehicles.

The approach ensures that sufficient tanks are available simultaneously for collective training, exercises, and potential deployments. "In consolidating them, we've set ourselves to better respond both to our needs and those of our allies," said Dwyer.

By concentrating resources to maintain "a capability that is both competitive with adversaries abroad and ready to be called upon for our NATO allies," the Army is ensuring it can make meaningful and sustainable contributions to collective security. This aligns with broader commitments outlined in the 2017 defence policy, which emphasized the importance of maintaining robust capabilities for NATO operations while ensuring sufficient forces remain available for

domestic operations.

Beyond the operational advantages, tank centralization creates significant benefits in terms of technical expertise and knowledge management. By bringing together technicians, maintainers, and operators in a single location, the Army is effectively creating a center of excellence for armoured capability.

"We are looking to consolidate the technicians, service, supply, parts and availability within one region," Dwyer explained. "This allows us to build not only a fleet that's more robust, capable of taking on more tasks at a given time, but also, I think, consolidate our knowledge base, both with dealing with industry and ourselves, to keep improving this asset."

Given the sophisticated nature of modern

armoured vehicles and the specialized skills required to maintain them at optimal readiness levels, it's an important consideration.

Central to the consolidation strategy is the LTSC awarded to KNDS Deutschland GmbH & Co. KG (formerly Krauss-Maffei Wegmann), which includes the establishment of a Regional Maintenance Centre near Edmonton. The public-private partnership leverages the contractor's intellectual property rights and technical expertise while allowing military maintainers to focus on immediate operational requirements.

"The big alleviation that happens for the Canadian Armed Forces (CAF) at large with this process is that we can leverage this regional maintenance center and this LTSC to take a lot of these day-to-day inspections that take a lot

of man hours," said Dwyer. That, in turn, frees up military technicians to focus on performing specialized maintenance tasks.

Relocating the entire tank fleet to Edmonton presents both challenges and opportunities for training across the Army. With armoured units and personnel distributed across the country, ensuring continued access to tank training has required careful planning and adaptation.

"The Divisions and our training authorities have all been working through that piece," Dwyer acknowledged. With individual and collective training for tank crews now centralized in the West, units in eastern Canada must adapt their training cycles accordingly.

For Regular Force armoured units like the Royal Canadian Dragoons (RCD) and the 12e Régiment

A Canadian Leopard 2A4M from the battlegroup in Latvia fires its 120mm gun during Ex Paladine Sabre in August 2024. Photo: Cpl Marc-André Leclerc

Future Upgrades

What comes next for armoured cavalry? The 2024 defence policy update acknowledged that “main battle tanks continue to have a decisive effect on the modern battlefield” and committed to “explore options for upgrading or replacing our tank and light armoured vehicle fleets.”

The Army’s current Leopard 2 fleet includes 34 Leopard 2A4 tanks for training, 20 upgraded Leopard 2A4M tanks, 20 Leopard 2A6M tanks (some undergoing conversion to the 2A6M C2 variant), plus supporting armored engineering and recovery vehicles. Except for maintenance training vehicles, these are being consolidated in Edmonton under the tank centralization initiative.

There is a major near-term \$76 million conversion of Leopard 2A6M tanks to the 2A6M C2 CAN configuration currently underway at FFG Canada’s Bathurst facility. The project addresses obsolescence issues with analog technology, ensuring platform viability until 2035.

For a service life extension beyond 2035, significant upgrades would be necessary, potentially costing over \$620 million. These could include improved protection against modern anti-tank weapons, enhanced surveillance capabilities, upgraded firepower, and mobility improvements. The Heavy Direct Fire Modernization project, previously known as Tank Life Extension, is expected to reach the definition phase of defence procurement sometime after 2028, suggesting major decisions will need to be made within the next three to five years.

NATO interoperability will be a key factor as the Army seeks to align its future fleet with NATO partners, ensuring seamless integration during combined operations. Any shift away from the Leopard 2 platform would need to carefully consider interoperability implications.

blindé du Canada (12 RBC), that means that tanks are no longer permanently stationed within their Regiments. However, both continue to maintain their armoured capabilities through personnel rotations and qualifications.

“The cavalry units or armoured units rotate in and out, gaining qualifications and familiarity with the tanks,” he said. “They can bring that knowledge and expertise back to their divisions and use the same tactics while training with other platforms.”

A key mitigating factor in the training equation is that major collective training exercises have traditionally been conducted in Wainwright, Alta., which is relatively close to Edmonton.

“Collective training, holistically at the sort of joint levels, usually happens at Wainwright

anyway,” Dwyer noted. Consequently, for larger exercises that integrate armoured, infantry, artillery, and other elements, the centralization of tanks in Edmonton creates minimal disruption to established training patterns.

While the main operational fleet is now based in Edmonton, the Army has maintained some specialized training platforms at key locations.

“There are tanks currently in Borden to facilitate technician and maintainer training,” Dwyer pointed out, to provide maintainers with hands-on experience with the vehicles before deploying to operational units.

Though the LTSC move to consolidate around the Regional Maintenance Centre leverages the contractor’s specialized expertise to improve fleet availability and sustainability, “a large part of it still

resides with the military personnel—maintainers, movement personnel, tankers themselves—for day-to-day type [maintenance],” he said.

While the contract brings in specialized contractor support, the CAF retains significant maintenance responsibilities. The benefits of this arrangement include access to the original equipment manufacturer’s knowledge, direct connection to the original designers and engineers of the Leopard 2 system, reduction in inspection and maintenance time through optimized processes, and improved access to parts and components through the contractor’s established networks.

The initiative also provides a bridge strategy that maintains Canada’s direct fire capability while higher-level decisions about the future of

the country’s armoured forces evolve. While allied nations using the Leopard 2 platform are generally committed to keeping these vehicles in service until 2050, Canada’s current plan only extends to 2035.

Dwyer emphasized the importance of “strategic patience” during this transition, noting that the payoff from this initiative will take time to materialize as equipment and personnel relocate and the maintenance centre becomes fully operational.

The tank centralization initiative represents a pragmatic response to the challenges of maintaining a modern, effective armoured capability with limited resources. By consolidating its Leopard 2 fleet in Edmonton, the Army is optimizing maintenance, maximizing operational

availability, and creating a sustainable model for preserving this critical capability until 2035. While this approach presents training challenges, particularly for eastern-based units, the Army has developed mitigation strategies that maintain armoured warfare expertise across the force.

The consolidation, supported by the LTSC, provides a foundation for sustaining Canada’s direct fire capability while decisions about the future of Canadian armoured forces evolve. As the global security environment continues to shift and the future of armoured warfare takes shape, this approach provides Canada with both immediate operational benefits and strategic flexibility for the decades ahead. ■



An advancing Canadian armoured column on Ex Paladin Sabre. Photo: MNB-Latvia Imagery Technician



A Canadian tank on Iron Spear in Latvia in May 2025. Photo: MNB-Latvia Imagery Technician

Key considerations for the next big gun

By Chris Thatcher

“On a modern battlefield, mobility is king.” It’s a lesson hard learned on the battlefields of Ukraine and consequently a requirement driving the Canadian Army’s Indirect Fires Modernization (IFM) project.

“As soon as you fire a 155-millimetre round in today’s environment, you are being detected by counterbattery radar systems, uncrewed aerial systems (UAS) or loitering munitions that are constantly surveying the battlespace, or even space-based sensors that have the ability to detect firing,” observed Lieutenant-Colonel John Zwicewicz, the section head for a program in the Directorate of Land Requirements (DLR) rebuilding the Army’s artillery capability.

“Knowing that as soon as you pull the lanyard, you can be detected almost instantaneously by an adversary, you need to be ready to move within a few minutes after that fire mission,” he said. “If not, in some instances, you could be a sitting duck.”

“So, we definitely see the future solution for IFM being self-propelled artillery platforms and vehicle integrated mortar systems.”

DLR is currently in the options analysis phase, confirming the full scope of a project that will involve not only platforms and munitions but also new infrastructure for artillery regiments, service battalions, and possibly even supply depots. Mandatory requirements are still being finalized as are the overall budget and a preferred procurement approach.

“We’ve engaged with industry quite a bit over the past two years,” said Zwicewicz, “so we have a solid understanding of what’s out there, but maybe not a comprehensive one.”

The project team’s latest round of information gathering was a request for information (RFI), released in February and closed in early April, on the full suite of weapon systems. It also included an annex on how Canadian industry can be involved in the procurement.

DLR expects to present the project’s scope to the Defence Capability Board, chaired by the Vice Chief of Defence Staff, this spring for approval, which will support a funding request to government to begin the definition phase. The intent is to have a capability fielded and at the initial operational stage by 2033 or sooner.

“In the past, we know that some projects have been funded to a certain level, and then as the project matures, we realize it’s not quite enough to meet requirements,” he explained. “Our approach is to have a well-defined understanding of the full scope and funding requirements earlier in the process.”

Back to doctrinal basics

There was a time, several decades ago, when the Army could boast a modern fleet of mobile artillery platforms: M109 self-propelled tracked howitzers and mortar carriers integrated into LAV II Bison armored vehicles. Those were divested beginning in the late 1990s, and artillery regiments have not had the same mobility since.

For counterinsurgency operations in Afghanistan, the Army rapidly procured the BAE Systems M777, a 155-millimeter towed lightweight howitzer that was well suited to a fire mission conducted primarily from fixed locations such as forward operating bases, and with minimal fear of counter fire.

If mobility was required, the gun could even be slung-loaded by CH-147 Chinook helicopter to another location.

“Totally the perfect weapon system for that mission,” Zwicewicz noted.

With divestment in weapon systems came a reduction in personnel. Army doctrine proposes 18 guns per artillery regiment. To force-generate the troops for counterinsurgency, that number was lowered to eight howitzers per regiment, reducing the number of gunners needed to form a battery.

Now, as part of force restructuring to meet the obligations of a multinational brigade in Latvia, “we need to adjust our forces,” Zwicewicz acknowledged. “In some ways, it’s going back to some of the doctrinal basics, re-equipping our units with the right number of howitzers, at least 18 per regiment, and restaffing our infantry battalions and armored regiments with the organic mortar capabilities that they need to fight and win in operations.”

Consequently, IFM has become one of the Army Commander’s top four priorities.

“It’s a substantial project when you look at the quantities of platforms that could potentially be acquired,” said Zwicewicz. “And all of it’s very much needed so that we have the right basic foundational combat capabilities to do operations in support of NATO and other allies.”



Canadian artillery fire 155mm rounds from a M777 howitzer on Ex Annihilating Thunder in November 2024. MNB-Latvia Imagery Technician



KNDS Deutschland Autonomous Gun Module mounted on a Rheinmetall Boxer 8x8. Photo: KNDS Deutschland



General Dynamics Land Systems-Canada proposed artillery platform. Photo: GDLS-Canada

Though the mandatory requirements are still being finalized, mobility and survivability will trump all. Observations from Ukraine and elsewhere have reaffirmed the importance of “shoot and scoot” performance – emerging quickly from a secure location to fire a high barrage of rounds, and then relocating before a counterstrike.

Ideally, that could be done on the move, Zwicewicz suggested.

“There are a couple platforms out there that offer the ability to actively do indirect fires missions while the platform is moving. This could be a game changing capability, because for past decades, artillery has always been static when it’s firing. But in that high counterbattery, high surveillance threat environment, if your systems are able to engage those indirect targets while they’re on the move, that could provide significant advantages, particularly when you’re supporting a force on the offensive.”

The pace of manoeuvre on a battlefield can be limited by the rate of supporting fire, he noted, “so there could be a significant increase to tactical operational tempo with a platform like that. But we’re still in the early stages of understanding that capability and requesting information from industry.”

Related to survivability is a need for protection from blast overpressure. Recent research by allies has highlighted the long-term concussive effects of repeatedly firing a 155-mm or mortar round. Studies by the U.S. on Army Ranger M777 battalions coming out of Syria, for example, “where they were doing max high rates of fire at maximum range,” found mild brain trauma injury, Zwicewicz said.

“It’s a significant issue we want to better understand. That’s part of our engagement with industry,” he said, to explore systems that have an enclosure or other mitigations to protect crews.

With mobility comes extended range. The Army is seeking a 155mm gun with a range of 30 to 40 kilometres, and mortars with a reach of between five and 10 kilometres, depending on whether they are 81 mm or 120mm calibre systems.

Final quantities are still on the drawing board, but since the project is a significant enhancement rather than replacement of current artillery capability, there could be as many as 80 to 102 of the 155mm platforms and similar quantities of the mortar variants.

Through the Munitions Supply Program, the Army is working to increase domestic production of all ammunition types. A new howitzer would require the M795 round rather than the current M107, but otherwise few major changes to production are anticipated.

“We’re not going to switch 155 shells at this point,” said Zwicewicz. “We know with the modern systems, 52 caliber guns, we’re going to have to invest in a new propellant system, just because the chemistry is different, with a longer barrel and different pressures, and new primers will be required.”

The larger investment will be in infrastructure. Facilities in Gagetown, Valcartier, Petawawa and Shilo are in some cases already obsolete, he noted. Moreover, gun barns and maintenance facilities built for the M109 are not big enough for the longer and heavier 155mm systems now in service, and the supply depots in Montreal and Edmonton are at capacity.

“With the significant quantities of new weapon systems coming into service, we need to make sure that all the sustainment pieces are covered off,” he said. “In fact, I think that’ll be the most challenging activity over the lifespan of this equipment.”

People and infrastructure

With more indirect fires of all types, the project team is projecting as many as 1,500 more positions to both operate and sustain the systems. Like the equipment requirements, the personnel numbers are still in flux, but “we’re proposing some significant investments in additional people for the Army,” Zwicewicz said.

“We need to staff back up to have artillery regiments with the right amount of people to fill these roles.”

That could include standing up another close support artillery regiment. The 1st Regiment, Royal Canadian Horse Artillery, in Shilo, currently operates the M777, but with the Long-Range Precision Strike project soon to provide it with weapons able to fix and finish targets out to 80 kilometres, the Army will need a new 155mm unit in 1 Canadian Mechanized Brigade Group.

The new guns are also intended to be supported by Army Reserve units, which should benefit from significant levels of automation to more rapidly train gunners.

Where legacy howitzers require operators to survey, calculate a firing solution using reference books, get a common reference point using manual sights, and figure out orientation and direction, “these new systems, aided by a commercial navigation system, gyroscope and modern jam resistant GPS solutions, are fully automated. None of that’s required,” said Zwicewicz. “Digital transmission of target coordinates with firing instructions come into the fire control panel, and the crew’s job in terms of operating the howitzer is very much simplified on these platforms.”

Consequently, “training becomes a lot easier to deliver to Reserves that in some cases are occupying historical armories that you can’t necessarily drive a 155mm howitzer in to. But you could definitely have all the fire control panels and tools you would need to train those troops on the foundational skillsets to operate the howitzers.”

The IFM project will follow on the heels of Joint Fires Modernization, a critical component to digitizing the fire mission and linking sensors with shooters, which is expected to achieve initial operating capability in 2027.

“JFM is going to develop that command-and-control network so that fire orders can be passed digitally down from headquarters where decisions are being made, and from forward observers who are identifying targets with their optics and transmitted those to battery command posts,” said Zwicewicz.

“On each gun platform, you’ll have a fire control panel and software suite that will be connected to a radio driven digital network that will connect back to those command posts. It can be integrated so that when the call for fire comes down to the battery command post, they can send it to the right gun to execute the mission.”

Last spring, the DLR team issued an RFI on pricing and production lead times as it weighed the merits of adopting an Urgent Operational Requirement approach to fast-track a capability into the Army and help inform the large IFM procurement project.

Though acquiring a limited number of guns was ultimately nixed as unfeasible – especially if it generated mixed fleets with different munition requirements, training systems, and sustainment – the outreach to industry did prove strong vendor interest. Given the importance of addressing the larger institutional requirement for fires modernization, the Army Commander instead opted for a major capital project. ■



EYES OF THE NORTH

Enhancing the structure, training and operational mandate of the Canadian Rangers

By Ken Pole

“There’s really no life like it.” That slightly amended Canadian Armed Forces (CAF) recruiting pitch from nearly a half-century ago remains relevant to the Canadian Rangers, a unique element of the Army Reserve even as it faces the prospect of a more “holistic” approach to its mission.

Stood up in May 1947 and now some 5,000-strong, the Rangers are an essential first line of defence tasked with surveillance and sovereignty patrols where Regular forces aren’t always practicable. That’s especially true in the Arctic, but also in sparsely populated southern

regions—an aera of operations that covers two-thirds of Canada’s total landmass.

Given how widely the Rangers are scattered, often working in small groups in the remotest parts of a region with increasing strategic importance, their command structure has been historically and necessarily less formal than elsewhere in the CAF. That’s partly due to the fact that they are spread across the country in more than 200 patrol groups of varying sizes and speak more than two dozen languages and dialects.

An internal January 2000 report acknowledged deficiencies in Ranger-specific policies, including those addressing financial and other support elements, but the process stalled as other priorities prevailed.

However, a more recent gap analysis of Army structure and capabilities reconfirmed a force-wide need to “recalibrate” roles and responsibilities, including expanding their capacity to act as a sensor to the CAF and other government departments with more frequent patrols on the land. It’s now a top priority for Army Commander Lieutenant-General Michael Wright.

Called the Canadian Rangers Enhancement (CRE), the project aims to provide a holistic view of operational output, training, equipment, infrastructure and staffing, supported by a more

formal structure and policies.

“We are trying to unlock how to revitalize the operational requirements of the Rangers,” said Major Philippe Branco, who leads a small team advancing the initiative within the Directorate of Canadian Rangers. “Historically, they’ve been conducting business informally. Due to increased interest in the North, it was important to provide cornerstone documentation as a foundation for future investment in them.”

Deeply invested in their own communities, the Rangers are an essential resource tapped for their knowledge and experience by federal departments and agencies requesting assistance for search and rescue, natural disasters such as wildfires or floods, and humanitarian relief. It’s an acknowledgement that local knowledge is invaluable.

“They’re almost like a hybrid force between public safety and the military,” Branco told *Canadian Army Today*, his enthusiasm evident. “They’re always present when the red phone rings.”

But to have that ready “access and influence” to isolated communities and their surroundings, the CAF needs a better approach.

Traditionally, “nothing has been formalized within the Ranger world,” said Branco, who spent



Left: Sgt Juusipi “Aquila” Qisiq. Photo: DND

Below: Cpl Frederick Duff on Xerus Nordique in Chisasibi, Que., in March. Photo: Pvt Erika Licursi



eight years at Canadian Ranger Patrol Group headquarters in Northern Quebec before his transfer in June 2022 to take the CRE reins at National Defence Headquarters.

While previous efforts increased the number of Ranger patrols and strengthened staffing, which meant “more horsepower” to deal with longstanding issues, the “lack of fundamental backbone documentation” was not fully addressed, he said.

Under CRE, the Army has shifted its focus to an approach that ensures Rangers’ training is planned rather than ad hoc, and operational responsibilities and the requisite equipment are supported by policies and structure. Also, akin to how the Army began bridging the gap between the Regular and Reserve forces in the 1990s in a “One Army” concept, Branco said the goal is to ensure the Rangers are more aligned with the rest of the CAF.

CRE’s foundation lies in the government’s June 2017 defence policy that proposed, among other things, an “enhanced presence in the Arctic” that would include upgraded surveillance. That 20-year blueprint stated that National Defence would “increase (its) presence in the Arctic over the long term and work cooperatively with Arctic partners.”

Fast forward to the April 2024 policy update: Refining its focus, the government acknowledged that climate change, in making the Arctic increasingly accessible, was creating new security challenges. The answer, it stated, was a “ready, resilient, and relevant” CAF, including the Rangers, “enabled by the right equipment in the right timeframes, and working with safe and effective

infrastructure.”

That necessitated a clear, CAF-wide understanding and appreciation of what was needed of the Rangers, that “operational input was on point,” as Branco put it.

A new directive is expected from the Chief of the Defence Staff, General Jenny Carignan, to ensure all command levels align on policy needs for Northerners in general and Rangers in particular.

“We’re almost done with revamping that core directive—the administrative order for the Rangers,” said Branco. “That’s big – changing the tasks, revitalizing the role, the vision and the mission statement.”

Rather than “define and push it as a big block,” the CRE team has opted for a phased approach for the initiative.

One of those is ensuring the Rangers have a military employment structure. At present, there is no documentation on recruitment standards and training. What skillset are required, notably

in leadership roles? “That did not exist formally,” Branco said, “so we’re building that military employment structure right now.”

By definition the Rangers are a lightly equipped force. As part of CRE, the Army is looking at the full scope of their equipment needs, especially communication capabilities. Very High Frequency (VHF) radio handsets are effectively a line-of-sight technology, and cellular service, whether via satellite or tower, is a major challenge. Yet, reliable communications within a patrol or between patrols and up the command chain are critical, as is communication with police, search and rescue personnel, and other responders.

If one of the CRE objectives is improving the Rangers’ role as a “sense” capability across the North, then expanded cellular and satellite coverage is key to sharing information. That falls outside the scope of the CRE initiative—the Royal Canadian Air Force is the lead for several space-based projects, including one to enhance polar region satellite communications and one to deliver



Left: Working with the Navy in Tuktoyaktuk during Op Nanook in March. Photo: Lt(N) Pamela Hogan

Below: With members 443 Sqn Cyclones during a marine SAR exercise in Port Renfrew, BC, in March. Photo: DND



tactical narrowband SATCOM. But making the Rangers part of the Army’s digital transformation, despite possible security clearance issues, is important, said Branco.

“Digital acquisition is definitely a big part of this,” he said, explaining that a specific Ranger app could be a means for communicating and enhance data security. “We’re connecting with Denmark, which has a similar program called the Greenlandic Guardians.”

Then there’s infrastructure. Needs can vary regionally at different times of the year and depending on the mission. Rangers usually have a shipping container for collective equipment storage. While that will remain the case, a project is underway to roll out two styles of tents suitable for above and below the treeline as the Rangers push further into the hinterland.

Getting out there throughout much of the year involves snowmobiles, most of which are privately-owned by the Rangers, or small 4x4s. Boats become an option or a necessity during the brief Arctic summer and its shoulder seasons, which are expanding due to climate change. Snowmobiles are a significant personal capital cost, so the Army is increasing operational subsidies. “Now there’s an incentive to have a snowmobile,” Branco said.

Fewer northerners are venturing as far out on the land as they used to for hunting, fishing and traditional purposes. The CRE initiative aims to not only increase the frequency of patrols, but provide more structure and purpose to what has often been informal monitoring of maritime choke points in the Arctic Archipelago or key infrastructure such

as radar sites, fuel dumps or harbours.

“They need to be ‘eyes on’ so we must ensure we know what we want them looking for,” Branco said. “It’s going back to their genesis of going on the land; we’re looking to increase their presence. What usually happens now is that they go on the land throughout their annual training. An instructor would come from the south and then they would go and do a patrol focused mostly on training.”

Such patrols can often yield strategically important information or discoveries, but now the intention is to provide “a specific mandate” as part of a wider CAF plan to better focus the Rangers’ time on the land.

“Where they excel is within a 200-kilometer bubble around their communities, where they know the land and the people,” Branco observed. “In the past, it might have been, ‘Hey, if the Rangers are available, let’s bring them in.’ Now, the Army and the Rangers are both at the table as far as planning and training are concerned.”

The Rangers’ distinct value is their local

knowledge of their surroundings and the mobility to reach out rapidly.

“No one can reproduce that. No one within the CAF and even some more local jurisdictions has the presence 365 days a year,” he said, “so we need to preserve this ability to be a trusted agent in each community.”

This fundamental reliance is being factored into the Rangers’ instructor selection and training as a key element of the transition to a military employment structure. “We’re building that specialty so that the Ranger instructor is recognized as a mentor. They are often a sergeant or a warrant officer, usually combat arms.”

“With the proper training, a Ranger can definitely be a big part of making sure that the North is secure and well taken care of,” Branco said. “They deserve an adaptive policy, to be trained and equipped, to ensure that they fulfill their mandate. We’re excited to be pushing out initiatives that will make their life a lot easier.” ■

FINALIZING GROUND MOBILITY IN THE ARCTIC

BY KEN POLE

With Canada's northern flank increasingly seen as a strategic vulnerability, much of the focus has been on acquiring air defence and new sensors, and on creating northern operational support hubs in an area that accounts for nearly 40 percent of Canada's land mass. For all that, there's still the grunt work of getting around on the ground in an inhospitable environment that continues to evolve due to climate change.

Enter the Domestic Arctic Mobility Enhancement (DAME) project, a rapidly maturing Army venture that will procure up to 170 vehicles suited to the North's always challenging topography and mix of taiga and tundra.

The project intends to replace the Army's current Arctic workhorse, the Bandvagn 206,

an articulated tracked all-terrain vehicle initially developed for the Swedish Army in the early 1970s by Hägglund & Söner, and later by BAE Systems Hägglunds. It consists of two linked units capable of carrying a total of 17 persons.

"We are looking good for entering definition this summer," Major Bill Prince, DAME project director since last summer, told *Canadian Army Today* in early March. "All our internal governance pieces, different boards and panels that review projects and make sure we are asking for the right things," are in place. "We have gained a lot of momentum."

Delivery of the new vehicles, which will be strictly for domestic deployment, originally was expected to begin this year, but the global

pandemic undermined the process by, among other things, disrupting supply chains and human resources. As the impact of the pandemic waned in 2023, the Directorate of Land Requirements (DLR) and Public Services and Procurement Canada issued a request for information (RFI) to reassess industry interest.

The goal is now a request for proposals by 2026, followed by contract award in 2027. Prince said there had been further discussion about the scope of the project, which initially envisaged up to 153 vehicles and full fleet operation by 2030.

The Army will account for the bulk of the fleet, but the Royal Canadian Air Force is receiving several to station in support of flight operations in forward locations such as CFB Alert in the High Arctic.

"This is a high priority for the Army Commander and for the government at large," said Prince, a member of the Royal Canadian Dragoons, the Army's senior armoured regiment by precedence. "That brings a lot of light to moving this project forward."

With the implementation phase now pushed back to 2028, he said the Army is looking at initial delivery in early 2030, initial operational capacity the following spring, and full operational status in early 2032.

"We're trying to move as fast as we can to get this capability into the hands of our soldiers," he said. "But we don't want to move so fast that we fail or trip ourselves up. We want to advance with purpose, to achieve all our gateways."

While the schedule is progressing, the Army is still working on how the new fleet would be distributed.

"Each Division will get a company's worth of vehicles—a number that's still in flux," said Prince. "Arctic Response Company groups will be one of the main users and Immediate Response Units in each division may use those vehicles."

The Global Response Task Force, when they

have an Arctic remit, would also be using these vehicles. In addition to the Divisions, a couple of schools are going to be getting them to be able to train maintainers and operators, and train the Advanced Warfare School on being able to train Arctic warfare tactics. As well, the Arctic Training Centre will get a company's worth in Resolute Bay.

Several potential vendors have expressed interest, but Prince would not go into specifics, except to say that three manufacturers responded to the RFI. BAE Systems Hägglunds is understood to be interested in supplying its similarly configured BvS 10 Beowulf. Although BAE could cite its history with the Canadian Army and others, Singapore-based ST Engineering Land Systems (formerly ST Kinetics) could offer its Bronco 3, which is in service with a number of countries, including Ukraine. As well, Montreal-based UTV International has for several years displayed its Voyager D12 Personnel Carrier, a rugged amphibious, articulated, hybrid-electric offroad transport vehicle, at CANSEC.

"We are looking at a competitive process," Prince stressed. "We have been communicating with RFI's. They have been updating us on what their capability is and what they offer. We have been using that to refine our requirements, scope, and budget."

While the core vehicle, like the legacy Bv 206 platform, would be powered in both halves, the Army also is contemplating the addition of an unpowered trailer. Each would have a driver and crew commander, with the troop carrier variant able to accommodate up to eight troops kitted out for winter warfare.

Prince emphasized that the new platform will not be a fighting vehicle, "where we drop the ramp and the troops dismount and fighting through to an objective." It will be neither armoured nor armed because "we wouldn't necessarily be that close that we need to dismount and fight right off

that vehicle. We would have some time and space to shake out and be able to do our tasks. I believe some of our allies have armored vehicles and potentially weapon systems mounted on similar vehicles, but that is not a capability that we are looking at.

"This is a support vehicle, a mobility vehicle. It is to get the troops to where they need to do their tasks, supply them with the stores and supplies they need to be able to do that, but not a fighting vehicle. Armour and weaponry certainly would increase its weight and cost."

Command, cargo and ambulance variants also are in the works, the latter capable of carrying at least two stretchers or four walking wounded and a medic.

Increasingly important in a fiscally constrained environment, the Army is looking for "an off-the-shelf product because we don't want to do any development," Prince said.

"We want to pick something that has a proven track record in service with our allies, so there is less development work, and less time spent doing testing. We can just pick the winning bidder and be confident that we have a successful product."

Whatever the DAME project yields, it must be

amphibious. "That is something the Army hasn't had in some time," he said. "That's going to be a little bit of a change, especially for some of our younger soldiers. They may not remember that we had amphibious vehicles in the past, so there will be a bit of education on how to safely swim in an amphibious vehicle and how to enter and exit the water."

"This reflects the way things are evolving in the Arctic and the North generally. It's not so much that it's going to be an ocean-going vehicle."

Water operations wouldn't be a priority, but survival is should the vehicle break through ice.

"We also would use this vehicle in the South for supporting floods and that kind of thing."

And what about the environmental footprint of a two-tonne vehicle in such vulnerable terrain with permafrost?

"We haven't ... done any studies on the environmental impacts," Prince noted, but by design, "[a new vehicle] is going to have very low ground pressure." Diesel power will mean it can operate on NATO common fuel and ultra-low sulphur, which is generally what's found in North America. ■



A Bv 206 operated by 1st Battalion, Royal 22^e Régiment near Resolute Bay in March 2024. Photo: MCpl Alana Morin



Photo: S1 Bryan Underwood

A field trial with the Integrated Soldier System and TAK

By Chris Thatcher



Training with equipment you might one day deploy with seems a given, but at times it has been an issue for members of the Army Reserve. That was apparent to Major Saajan Sarai, Operations Officer for 39 Signal Regiment, following a rotation in Latvia with 2 Canadian Mechanized Brigade Group Headquarters and Signal Squadron (2 CMBG HQ & Sigs Sqn) to support battlegroup communications and information systems as the Army transitioned to a brigade tactical network. Posted to the Vancouver-based Regiment on his return, he noted the incompatibility between Reserve radios and the Integrated Soldier System (ISS) suite and TAK-enabled devices now being deployed by Regular force dismounted troops. With more reservists from 3rd Canadian Division in the pipeline to deploy, that raised a red flag.

In Latvia, he had helped train signallers to both operate and support the ISS and TAK (Android Tactical Assault Kit) on a local TAK server, but the new technology and its enhanced situational awareness systems were not well understood among the reservists. Sensing an opportunity to build familiarity with the systems, he connected with Jim Peter Safar, president of Inter-Op Canada, a company based in Ste-Anne-de-Bellevue, Que., focused on next-generation tactical communications. The two had met during Inter-Op's participation in the experimentation conducted by 2 CMBG HQ & Sigs Sqn between 2022 and 2024 in Petawawa, Ont., to construct a dispersed yet connected command post with a resilient command-and-control structure. Inter-Op had provided new

Trellisware radios with the TSM waveform and Safar suggested a similar trial with the Reserve. Reserve units are often the federal government's manpower response to requests for assistance by provinces when natural disasters strike. In recent years, members from across the country have battled wildfires, stemmed flooding, and helped communities after hurricanes and snow and ice storms. Communications, especially during intense forest fires in remote locations, has been degraded or nonexistent, a critical deficiency when trying to track soldier locations and remain connected while working alongside government agencies and other first responders. Beyond building familiarity with a system reservists might one day use

and/or support, Sarai saw an opportunity to test and teach soldiers about the new systems in a natural disaster scenario with which many are all too familiar. In 2018 he deployed with the 3rd Battalion, Princess Patricia's Canadian Light Infantry, as their signals officer, when 2,115 fires ignited across British Columbia, burning 1.35 million hectares. "We had zero comms with BC Wildfire Service, zero comms with the RCMP," he recalled. "We had points of contact—cell phones—but we were mostly in the dark in terms of where our troops were. And in that mountainous terrain, cell signals were not good. We didn't have TAK then. We've made a lot of strides since, but in 2018 it was a huge communications challenge, a huge common operating picture challenge."



Multi-Agency Sensor Fusion

In late February, with approval from Army headquarters and some supporting funding to conduct an experiment, Sarai launched a trial with 39 Canadian Brigade Group (CBG) during Exercise Cougar Ready with prototypes of the Trellisware 750 radio and TAK-enabled phones and tablets.

Interoperable with the Army's ISS suite, the radio has "a built in Wi-Fi and a belt holster, so reservists can have their headset connected to their radio, and then use the Wi-Fi on their TAK device," he said. "In a cellular degraded zone, if you have Starlink [satellite internet service] in your company vehicle, and you have a link to the TSM integrated radio, you can get some network coverage to your edge user."

"Essentially, we had TAK end user devices, we had Starlink within the brigade, but we didn't have a way to merge those two capabilities. That's where the Trellisware 750 radio came in."

The technology quickly proved its value in a range of training scenarios, but it only gave the brigade a one- to two-kilometre range for most data sharing, depending on the density of the vegetation they were traversing.

"It's a force multiplier in terms of coverage, just because it uses a UHF S-band and L-band signal," he explained. "The pro of these high-frequency signals is that they can send a lot of data, which means you can share video, you can share pictures. But they get a lot of interference with terrain, and they don't punch through as much as VHF."

Having seen the utility of tethered drones as a communications relay during the 2 CMBG HQ & Sigs Sqn experiments and in Latvia, Sarai connected with Draganfly, a Vancouver drone system developer, with an offer to test and analyze their communications capability. In 2023, the company had signed an agreement with a provincial government to assist with wildfire mitigation,

response and recovery.

Where infantry, artillery and armored units typically see an eye in the sky as a data source, signallers see a relay node, he noted. By integrating the TSM waveform onto several drones, the brigade can create a mesh network to move data over a much wider area.

"It is transparent to the combat arms folks, because they're seeing video. But at the same time, we are utilizing their platform to bolster the land forces' radio coverage. It's a win-win."

Since the Army rarely acts on its own when responding to a domestic natural disaster, Ex Cougar Ready included participation from the RCMP and observation by a representative from the B.C. government.

The RCMP is also experimenting with TAK software on its devices and was able to validate with the Army the ability to connect and share data, including each other's drone camera feeds.

"We saw each other's blue positioning, which blew the commander away," Sarai said. "Plus, we were able to message one another and send ISR (intelligence, surveillance, reconnaissance) data to one another using Vidterra ISR integration software, which is coming into [the Army's] Cloud TAK. We had complete multi-agency sensor fusion happening."

The broader goal is a multi-jurisdictional Cloud-TAK ecosystem, an effort the Directorate of Digital and Army Combat Systems Integration (DDACSI) has been fostering since it tested the civilian application of TAK (Team Awareness Kit) with members of the 2nd Canadian Division responding to forest fires across Quebec in the summer of 2023. The software allowed both Regular and Reserve members to work with provincial agencies, despite degraded communications, sharing a common map and conducting text chats from their personal cell phones.

Sarai believes the demonstration with the RCMP showed the B.C. Ministry



of Emergency Management the value of a provincial common operating picture framework that could be scaled up in a disaster.

"It was a phenomenal display of interagency cooperation," he said, adding that it would follow in the steps of several U.S. States that have adopted TAK for their emergency response coordination.

The lessons from Ex Cougar Ready will be shared with DDACSI and might encourage other Reserve units to conduct their own trials with provincial agencies. "There may be an opportunity for other Reserve units to widen the analysis of this technology," Sarai said.

As for the Trellisware 750 radio, he noted that the technology is already in use with the Regular force and there is "keen interest in figuring out the next generation of Army Reserve tactical radios." Force-generating reservists on the same system would make the transition to a Regular force unit on a mission like Operation Reassurance in Latvia easier.

"It makes the Army a lot more modular, in the sense that you could pick a company out of the Reserve and drop them into a Regular force battalion, and because their entire radio systems are interoperable, the battalion signal platoon could bridge them onto their comms system almost instantaneously."

Importantly, trials like Ex Cougar Resolve are "a huge step in bringing the Reserve into the same architecture as the Regular force, so that we have One Army operating on same technology, with the same software." ■

 **BEST DEFENCE
CONFERENCE**
London, Ontario

REGISTER NOW

OCTOBER 21 & 22, 2025

London, Ontario, Canada

bestdefenceconference.com



Richard Jack's monumental painting of the 2nd Battle of Ypres captures the intensity of the fighting. (Library & Archives Canada)



A sketch of the German attack on the 15th Battalion at Grafenstafel Ridge. (Wiki Commons)

First Battle

By John Boileau

Amere two months after the German Army invaded neutral Belgium on Aug. 3, 1914, and brought the British Empire into a European war, 30,617 men of the Canadian Expeditionary Force (CEF) had been recruited, trained and were on their way to Britain in a great 31-ship armada. Col. Sam Hughes, Prime Minister Robert Borden's egotistical, volatile, hard-driving Minister of Militia and Defence, had created the CEF virtually single-handedly.

From this contingent, an 18,500-strong Canadian Division was formed of three brigades—each of four 1,000-man battalions—and an artillery brigade. In February 1915, the division deployed to France under British Lieutenant-General Edwin Alderson and entered the trenches of the Western Front.

Two months later, on Apr. 22, the division met its baptism of fire at the Second Battle of Ypres. The Canadians were not found wanting.

The First Battle of Ypres the previous fall had created a large semi-circular salient jutting into German lines in the Flanders region of northwestern Belgium. The 10-kilometre-deep salient bulged outward from the Yser Canal in a 27-kilometre-long curve. Ypres, a picturesque medieval moated city celebrated for its 13th century Cloth Hall, was centred on the salient's 13-kilometre-long base.

As the last major Belgian city still unoccupied by the Germans, Ypres—known to British troops as “Wipers”—took on a symbolic significance that completely outweighed its military value. In fact, the logical Allied course of action would have been to straighten out the line—a valid military strategy. This would have shortened the line considerably and required thousands fewer soldiers to man it. It would also have eliminated the German's ability to fire into Allied territory from three sides, largely from higher ground rimming the salient.

But such a course of action was unimaginable in a war in which holding terrain became the Holy Grail of most commanders.

Six divisions were deployed along the salient: two French ones on the northern flank, the Canadians on the northeast, a British one in the apex of the bulge, and two more British ones

on the southeast flank. Brigadier-General Arthur Currie's 2nd Brigade manned the right half of the 4,500-metre-long Canadian front. To their left was Brigadier-General Richard Turner's 3rd Brigade while Brigadier-General Malcolm Mercer's 1st Brigade was in reserve.

A German artillery barrage had been pounding Allied rear areas since Apr. 17, when the Canadians entered the relatively shallow trenches of the salient. Late on the afternoon of Apr. 22, German guns turned their attention to the French. Then, at 5 p.m., a greenish-yellow cloud drifted over from the German lines, released from 5,730 cylinders. The French Algerian line broke as terrified soldiers died choking and gasping in their trenches or fled to the rear. It was the first effective use of poison gas on the Western Front.

A 6,500-metre-wide gap opened up to the Canadians' left. Three German divisions poured through the breach.

The gas dissipated, but not before it drifted over the Canadian lines and caused casualties. The situation quickly became confused as the proverbial “fog of war” descended on the Canadians, compounded by cut telephone lines and conflicting reports. Few realized the Germans, after advancing about 3,000 metres into the French sector, had halted for the night around 6:30. In an attempt to stabilize the situation, Alderson ordered a counterattack against Kitchener's Wood, west of the village of St-Julien.

The 10th and 16th battalions moved off at midnight in eight ranks; 1,600 raw, untested troops in one of the most difficult operations of war—a night attack. A sudden charge—necessitated by German flares—was met with withering machine-gun fire. The next morning, less than 500 men answered rollcall as they huddled in a trench south of Kitchener's Wood. More than 1,100 became casualties. The attack had failed, not for lack of courage, but because it was poorly planned, uncoordinated and undertaken by inexperienced troops.

Two attacks in broad daylight on Apr. 23 by the 1st and 4th battalions against entrenched German positions on Mauser Ridge, west of Kitchener's Wood, lost 858 men. Although the attack did not

capture the ridge, it closed an open flank.

Elsewhere, the Canadians managed to hold on, while British units were sent piecemeal to plug the gaps. The next day at 4 a.m., the Germans launched another gas attack directly against the Canadian trenches. But the line held, after some soldiers were told to urinate onto a cloth and hold it over their faces to lessen the effects of the gas. The attackers slowly pushed the gasping survivors back to a new line along Gravenstafel Ridge, a low feature about 1,500 metres behind the original Canadian front line.

The situation was confused: isolated battalions, companies and platoons fought on against nearly overwhelming odds, unaware of what was happening around them. Canadian soldiers cried in frustration as their Canadian-designed Ross rifles—a pet project of Sam Hughes—jammed during rapid fire. Whenever possible, the Canadians threw them away and salvaged Lee-Enfields from dead British soldiers.

The situation worsened when Turner ordered an unauthorized withdrawal from the rubble of St-Julien, creating a 3,000-metre gap between his and Currie's brigade. Only a stalwart defence by Currie's exhausted men and the timely arrival of British reinforcements saved the day.

By Apr. 27, British units had relieved the Canadians. In their introduction to battle, the men of the Canadian Division had stubbornly held the line until forced back in a disciplined withdrawal, despite two gas attacks, jammed rifles, water shortages, and lack of communications.

The British War Office noted the Canadians' “gallantry and determination undoubtedly saved the situation” while others fled the chaotic battlefield. The Canadians had established a reputation as first-class troops, but at a stiff price. The division had 6,035 casualties, including 2,000 killed and 1,400 taken prisoner.

But for the first time in history, outnumbered and inexperienced colonial troops met a massed attack by a continental army on European soil. Although the Canadians were forced back, they did not break. It was an amazing accomplishment. ■

John Boileau has visited the battlefields—and the cemeteries—of the Ypres Salient on several occasions.

Strategic Foresight

A planning tool for uncertainty and change

By Michael Rostek, Yazan Qasrawi and Nancy Teeple



Uncertainty is a predominant characteristic of the 21st century, which presents as an environment of continuous change, where stability and predictability are absent. Disruptions to the status quo are not episodic but rather constant and unstable, often bordering on chaotic. How can military planners plan and prepare for this unpredictable future? Where do they start?

While it is true that the future is uncertain and unpredictable, the solution is not to attempt to diminish uncertainty, but rather, to learn how to function with it. Futures methodologies should inform defence planning today to meet future expectations, enabling military planners to be proactive, and thereby hedge costs in blood and treasure. According to J. C. Glenn and T. J. Gordon at the Millennium Project,

[t]he purpose of futures methodology is to systematically explore, create, and test both possible and desirable futures to improve decisions. It includes analysis of how those conditions might change as a result of the implementation of policies and actions, and the consequences of these policies and actions. Futures research can be directed to large or small-scale issues, in the near or distant future; it can project possible or desired conditions. It is not a science; the outcome of studies depends on the methods used and the skills of the practitioners. Its methods can be highly quantitative or qualitative. It helps to provide a framework to better understand the present and expand mental horizons.

Despite commonly held misconceptions, Futures research is a rigorous discipline with established methods and methodologies. Strategic foresight integrates futures methodologies into a cohesive framework to inform strategic planning and decision-making, creating a structured approach

for anticipating change and developing strategies to address its future challenges. Thus, the foundational concept of strategic foresight is that the discipline is about analyzing the causes and outcomes of change.

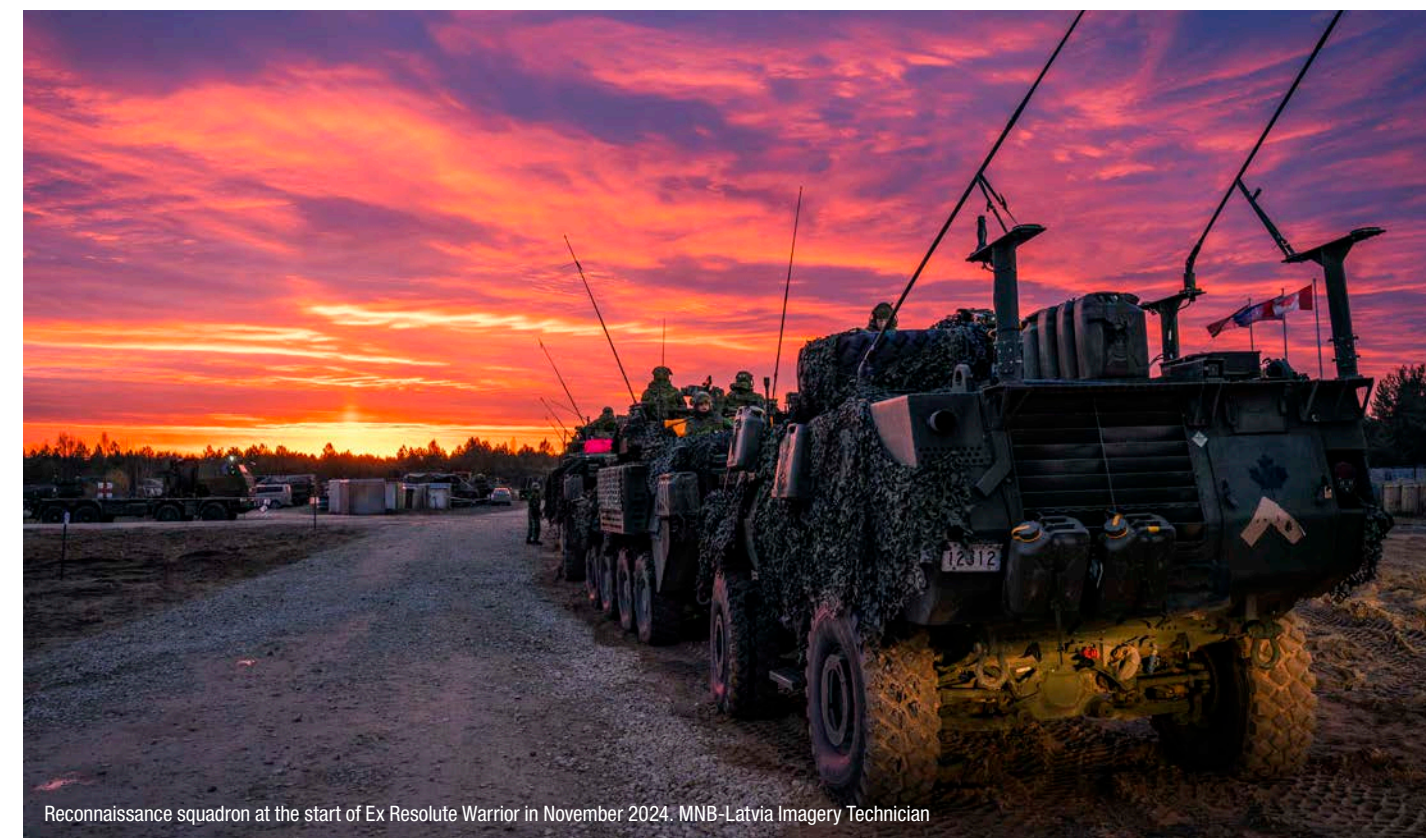
There are various types of change. Change can be triggered by a real crisis or some abrupt alteration in the world. This type of change, called imperative change, demands immediate comprehensive action. Success or failure are often determined by the ability to respond quickly.

Alternatively, an organization (such as the military or other governmental organizations) can create its own crisis in an attempt to create a sense of urgency. This type of change, called a contrived crisis, is risky and demands the same immediate and comprehensive action as imperative change.

In the case of responsive change, the organization has sufficient time to respond to required changes and the necessary actions and time required to fulfill those actions are clearly stated. Finally, in foreseeable change, changes are forecasted; however, the required actions and time remain uncertain, which often causes difficulties in generating interest and action, according to P.W. Beamish and C.P. Woodcock.

From a strategic foresight viewpoint there are four basic concepts that can engender greater understanding and refinement of change. These are the sources of change, the levels of change, the rates of change, and the time horizons of change.

Broadly speaking, change is understood as either inbound (change that happens to us) or outbound (change we create ourselves). Inbound change largely exists within the “contextual” environment, “that part of the environment which has important repercussions for the organization but in which it has little or no influence,” according to K. Van Der Heijden. Outbound



Reconnaissance squadron at the start of Ex Resolute Warrior in November 2024. MNB-Latvia Imagery Technician



Members of the multinational artillery battalion in Latvia during Ex Gamber Royale in April 2025. Photos: MNB-Latvia Imagery Technician

change largely exists within the transactional environment, “that part of the environment in which the organization is a significant player, influencing outcomes as much as being influenced by them.”

The future changes at three levels: the organization, the organization’s immediate environment (transactional environment), and the global environment (contextual environment). The contextual environment is often categorized into large sectors to help make sense of the massive amount of change taking place in this environment. One popular framework to help understand change at this level is the social, technological, economic, environmental, and political (STEEP) framework.

The types of change that take place in the contextual environment and within the STEEP framework are trends, which are changes in one direction over long periods of time; events, which are occurrences that impact trajectories and are expected to affect the future; and issues, which are things that people disagree about and for which they have to make a decision.

The prominent trends that signal forces of change for defence organizations include globalization, rapid scientific and technological innovation, shifting power balances, demographic shifts, resource scarcities, weak and failed states, growing significance of non-state actors, prominence of identity-based conflict, and the changing nature of conflict, such as grey zone activities and hybrid warfare.

How fast things change varies from continuous, long periods of gradual change (over the course of decades) to discontinuous, short periods of abrupt change (months, weeks, or even days). Examples of more predominant continuous change are aging demographics and environmental change.

Discontinuous change, on the other hand, is rarer, more unpredictable, and happens suddenly with little time to adapt, such as the fall of the Soviet Union, for example. It is this discontinuity that makes the future problematic.

The future would be much easier to deal with if the path it takes were smooth and continuous.

To aid in the task of strategic foresight, the future is divided into three time horizons. Horizon 1 (typically 0-5 years) aids in thinking about current assumptions, Horizon 2 (typically 5-15 years) focuses on emerging changes, and Horizon 3 (typically 15-30 years) investigates possible and desired futures.

Change can be viewed as both a condition and a process. As a condition, it describes what is happening in the environment; it is external. As a process, change describes the leadership and managerial actions taken to transform an organization; it is internal. Change as a condition is part of the reality that must be accepted; change as a process is ours to influence, according to G. R. Sullivan and V. M. Harper.

Capability-Based Planning (CBP), refined with the integration of a threat-informed process, is such an approach to change. CBP was derived as a result of the uncertain future security environment and CBP processes have been widely used within the Canadian Armed Forces (CAF) in some form or another.

Being “capable” is derived through fulfillment of specific human, scientific, doctrinal, infrastructural, environmental, material, and institutional conditions essential for successful service; that is, the ability to achieve an effect. A good example of a capability is direct fire. Capability is often confused with a platform. For instance, the direct fire capability is often wrongly associated with a tank. A tank, however, is simply the equipment designed to deliver the capability. Direct fire can be equally achieved using an attack helicopter. So, capability development processes force militaries to think about the effect that is actually needed, rather than simply the piece of equipment that delivers the capability.



The objective of the process is to meet defence requirements, allowing a military to remain relevant and effective in the current and future operating environments.

Capability development involves three steps: Conceive, where concepts are developed and translated into capability requirements; Design, where selected capability requirements are translated into validated designs for future use; and Build, where validated designs for force capabilities are refined and realized for use in the field.

While each step in the process is considered a distinct activity, considerable overlap occurs as a capability is first conceived, then designed, and finally built over a number of years. These steps are more or less aligned with the three time horizons of strategic foresight. Thus, the Army of Today, which typically falls under Horizon 1, roughly correlates with the Build stage of the process; The Army of Tomorrow, which typically falls under Horizon 2, roughly correlates with the Design stage of the process; and The Future Army, which typically falls under Horizon 3, roughly correlates with the Conceive stage of the process.

While each time horizon has its own set of challenges and outcomes, it is the Future Army outlook, 15-30 years into the future, which requires the greatest degree of abstract thinking. To study the future is to study potential change – not simply fads, but what is likely to make a systemic or fundamental difference over the next 30 years or more. Studying the future involves more than simply looking at economic projections, sociological analyses, or technological forecasts. It rather requires a multi-disciplinary examination of change in all major areas of life to find the interacting dynamics that create the next age.

The individuals working in this realm typically engage in strategic foresight. They examine the future security environment, identify areas requiring more

focused research, leading to a vision of the future operating environment. This environment, with its anticipated threats and challenges, lends to the identification of the capabilities required to operate in the future. They then propose alternative concepts and technologies to achieve the identified desired capabilities. Thus, strategic foresight can be considered as a precursor to the Conceive stage of the capability development process, where it informs the conceive stage of the capability development process, and sets the stage for designing and building capabilities.

No one force development process is a panacea. When CBP was first developed, it was to be used as a complement to threat-based planning. To balance future requirements with more current demands, however, the CAF has shifted to a concept-driven threat informed planning (CDTIP) force development approach. While this new approach does not eliminate CBP, it does bring the threat-based force development forward to better inform on gaps and prioritize the capabilities needed for the anticipated future operating environment.

Strategic foresight continues to be a component of the Army’s capability development toolbox at the Canadian Army Land Warfare Centre. The authors believe that futures and foresight analyses should be institutionalized within the Department of National Defence (DND) and the CAF, thereby allowing for proactive and innovative thinking concerning the uncertain and complex security challenges that confront DND-CAF today. Adopting such an approach is about how to proactively understand and deal with uncertainty brought about by complex and fast-paced change in a turbulent and uncertain world. ■

Dr. Michael Rostek is with the Defence Research and Development Canada’s (DRDC) Toronto Research Centre (TRC), and Dr. Yazan Qasrawi and Dr. Nancy Teeple are with DRDC’s Centre for Operational Research and Analysis (CORA).

A HACK FOR THE SENSOR-TO-SHOOTER LINK

When the Army released its digital strategy in 2022, it encouraged soldiers from across the force to innovate and experiment, to push forward ideas that could spur the Army on its digital transformation.

“Ultimately, we want every soldier to be a force developer,” Brigadier-General André Demers, then Chief of Staff, Strategy, said at the time. “We want to make sure that every soldier that comes up with a good idea can test it.”

That bottom-up innovation was on full display in the weeks before Christmas when the Army hosted a hackathon, the first of what it plans to become an annual event. The competition attracted some 25 teams from across the Land Force, as well as a few from Canadian Special Operations Forces Command (CANSOFCOM).

The winning team came from 39 Signal Regiment in British Columbia, a four-person squad of reservists with civilian backgrounds in cloud engineering, systems engineering, and cyber security, who demonstrated a rudimentary but effective way to digitize and automate the sensor-to-shooter link.

Their idea originated with the recent experience in Latvia of the team lead, Major Saajan Sarai, while helping implement digital fires software, known as FATES, and TAK (Tactical Assault Kit), a battle management suite of geospatial and data sharing tools that is rapidly becoming the bedrock of blue force tracking and target identification.

“We asked, what is the next bound? And the next bound—which I saw—was, how do you get the sensor to automatically translate priority data into the Fire Support Coordination

Centre (FSCC) officer,” Sarai explained.

“We wanted to automate that and make it as fast as possible, and then the human in the loop would just validate [the input] as a valid target, hit ‘engage,’ and send a fire mission out. That was our proof of concept for the hackathon.”

Using a C7 rifle as a stand-in for high priority air defence capabilities, the team was able to show that an artificial intelligence (AI) model looking for key words or imagery in an intelligence data lake could recognize “air defence” from a voice message translated to text or from an image generated by a sensor, identify it as a target, and immediately flag it on a dashboard for a FSCC. A dropdown menu then gave the operator quick action options, including the type of fire mission and number of rounds, which could then be sent to an FSCC officer for validation, before being transmitted to the gun line.

“This digitizes the entire chain, right from the sensor all the way down to the shooter,” said Sarai. “It’s more accurate. There’s an actual digital log being kept, and there’s authentication all the way through.”

Moreover, the process could capture and record rounds sent and forecast ammunition requirements, significantly improving sustainment.

“It was just a prototype of what is possible,” he said.

Sarai noted that in a scenario where a commander is defending a river crossing with engineer vehicles, categorizing offensive engineer vehicles as critical threats to prevent bridging action could “reduce the human latency factor significantly. The system would look for specific

assets in those voice messages and ISR data and flag them immediately.”

If the hackathon demo sounds like a merger of the Joint Fires Modernization (JFM) project, which will eventually digitize the call for fires decision-action cycle, and a DRDC Valcartier project known as Joint Algorithmic Warfighter Sensors (JAWS), which employs AI and machine learning processing at the tactical edge to ingest data from sensors and rapidly identify targets, you are not far off.

Though he was aware of JFM and some of the DRDC research, Sarai said the team’s concept was based on their own experience and an obvious need, which they confirmed in conversations with brigade artillery officers and joint terminal attack controllers, among others.

“I think there’s a lot more you could do, especially once the Integrated Soldier System and the Cloud TAK system are [widely deployed],” he said. “Once you have an army going digital, you become a data-driven army. And once you solve the sense and fires [link], I think you can move over to manoeuvre and sustainment as well.”

Going up against teams from across the Regular force and CANSOFCOM was a little intimidating, Sarai admitted, but the team of reservists had “a lot of digital skills.”

In April, they proved the victory was no fluke, winning the AI-Driven Cyber Threat Intelligence Challenge track at the 2025 NATO TIDE Hackathon in Dunkirk, France, with a demo of an AI-powered cyber defence system, which automated the detection and defend framework in support of tactical military operations. ■



CANSEC®

May 27 & 28, 2026

OTTAWA, ON

SAVE THE DATE

CANSEC returns to Ottawa in 2026

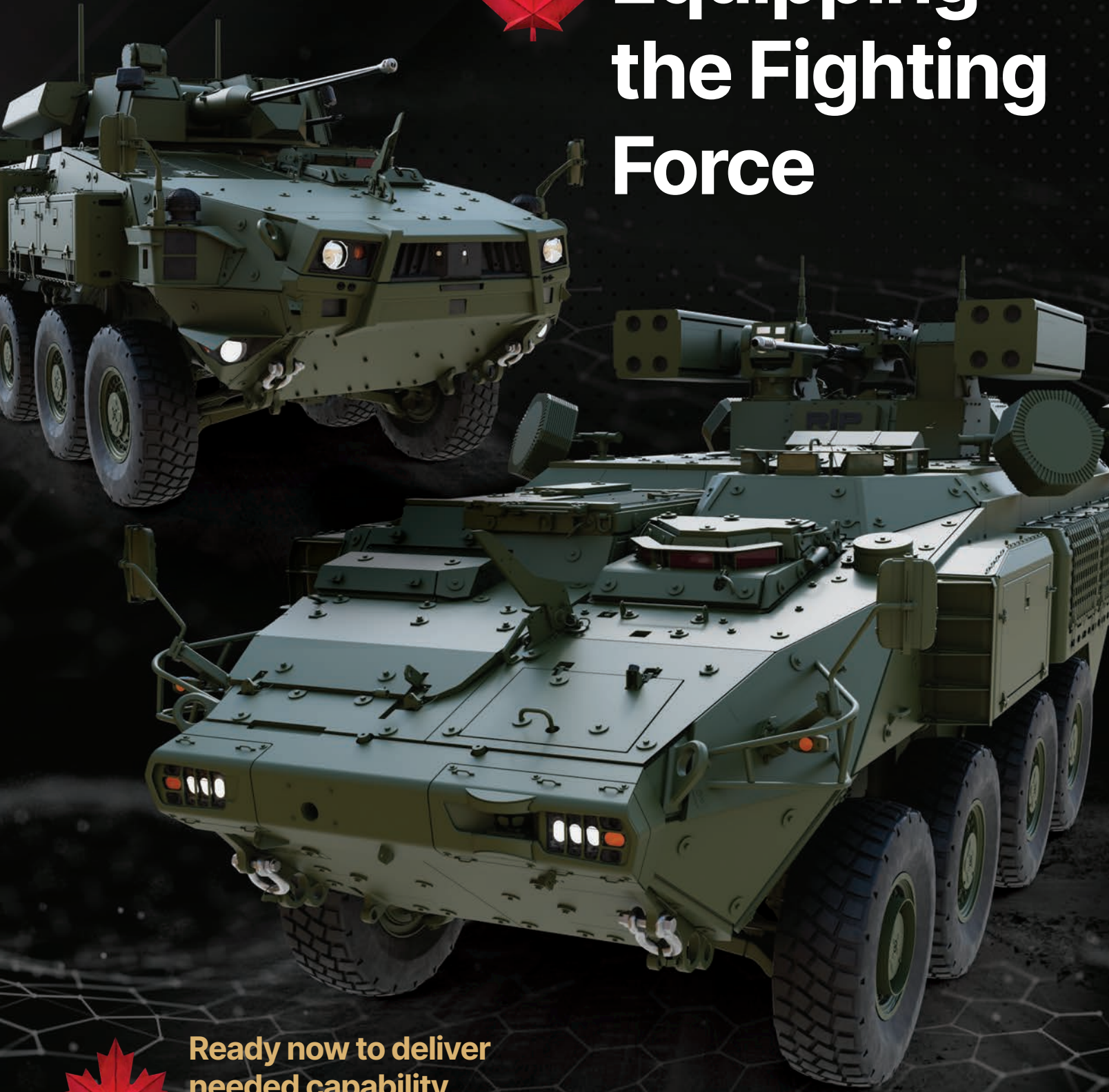
CANADA'S LARGEST DEFENCE, SECURITY AND EMERGING TECH EVENT



CWO Christopher Robin and LGen Michael Wright with members of the Hackathon team: Cpl Reese Rahman, Pte Grant Smith and Maj Saajan Sarai. Photo: Bdr Albert Law



Equipping the Fighting Force



Ready now to deliver
needed capability
for Canada

GENERAL DYNAMICS
Land Systems



SCAN TO LEARN MORE