



Defence Training as a National Strategic Capability

Connecting personnel generation and readiness
to the defence industrial base



Canada is accelerating defence spending, investing in new platforms and capabilities while re-invigorating the defence industrial base at home. Training technologies and solutions are a vital part of the defence industrial base. The ability to develop and deliver training solutions is an essential part of any military, and Canada should sustain investment and partnerships with Canadian companies that deliver training solutions. This will enable Canada to address personnel shortages today and build long-term capability and capacity to train personnel.

Defence Personnel Shortages: The Risks

Canada is re-investing in its national defence and intends to increase defence spending to reach the two per cent of GDP target set by NATO by the spring of 2026. Canada has ambitious plans for new capabilities, including long-range missile systems, new tactical helicopters, airborne early warning aircraft, and new fleets of destroyers and submarines.

These ambitious plans for equipment programs could under-deliver on expectations if personnel shortages continue. In 2025 the Canadian Armed Forces (CAF) were 14,000 personnel short and had delays up to 206 days for training new recruits.¹ These shortages are more acute for technically focused trades like cyber² and across the entire Royal Canadian Navy.³

With the shortages today, buying new platforms risks making the situation even worse with too few people to train new personnel on operating new and existing equipment. Without enough training capacity, some multi-billion-dollar programs may under-deliver because there are not enough qualified people to operate new platforms. Sustained personnel shortages could undermine readiness and Canada's reputation among its allies as a skilled and competent force.

Challenge: Lack of CAF Personnel Training Capacity

How can Canada address the personnel shortages? Previous approaches to surge personnel under-delivered on expectations, in part, because there is simply not enough capacity to train new personnel. The Chief of Defence Staff worried that without enough training capacity, recruitment would not address the overall force-size issue if personnel cannot be retained.⁴ The existing approaches are not likely to make the difference the CAF needs.

Training is at the core of addressing personnel shortages. By expanding training capacity, the delays that currently exist between the time a person joins the CAF and is

operationally ready can be shortened. This is vital because people awaiting training are the most likely to leave service to find work elsewhere when the military can't train them fast enough.⁵

For mid-career personnel, training is also essential. Experienced mid-ranked leaders take time to build, and their experience is vital for mission success. For technically focused trades, training is also essential to make sure that key functions like maintenance, cybersecurity and engineering are executed to keep the CAF ready.



Prioritizing Training Capacity of Defence Industrial Base

The current policy of accelerating defence spending is necessary to building CAF capability and readiness for Canada's sovereignty and for commitment to collective defence through NATO. The emphasis so far, however, has been on platforms. Announcements from government have focused on large platforms like ships, submarines, airplanes and armoured vehicles. Newspaper articles have talked about the fighter program and foreign suppliers on submarines. These large capital programs are essential for Canada's national defence, but on their own *they are not sufficient*.

Canada should be prioritizing the training capacity of Canada's defence industrial base to provide long-term assurance that Canada will have the domestic *industrial capability and capacity* to support personnel generation for the CAF. This means sustaining existing in-person training and also expanding simulation-based training to deliver relevant, realistic training through superior technology.

To develop a new generation of CAF personnel, Canada should prioritize training capacity in partnership with the defence industrial base—especially for developing simulation-based training solutions to supplement traditional training methods and approaches. Investment in simulation-based training will accelerate the pace of personnel generation and improve CAF readiness over the medium and long term.

Calian is a Canadian company with almost 30 years of experience developing and delivering training solutions for the Canadian Army, the Royal Canadian Navy (RCN), the Royal Canadian Air Force (RCAF), for NATO training centres, and for NATO member countries. We have trained 250,000 CAF personnel and 50,000 NATO personnel, and train—on average—10,000 new military personnel every year. Calian delivers this training with a blend of live training and a deep emphasis on simulation-based training solutions.



Calian Training and Personnel Generation Solutions

Classroom and Basic Skills Instruction

To build occupational skills, military schoolhouses operate just like civilian schoolhouses. Students attend lectures and classes to build knowledge and understanding of their occupational specialization. This knowledge is the baseline for building operationally ready personnel.

Calian delivers classroom instruction at over 20 CAF schoolhouses for a wide range of Canadian Army and RCAF trades, and joint enablers like electronic and mechanical engineering, logistics, communications, intelligence and more. Calian relies on a mix of instructors with years—sometimes decades—of military experience, and civilians with equivalent civilian certifications to deliver training. For almost two decades, Calian has delivered turn-key classroom training solutions to build skills.

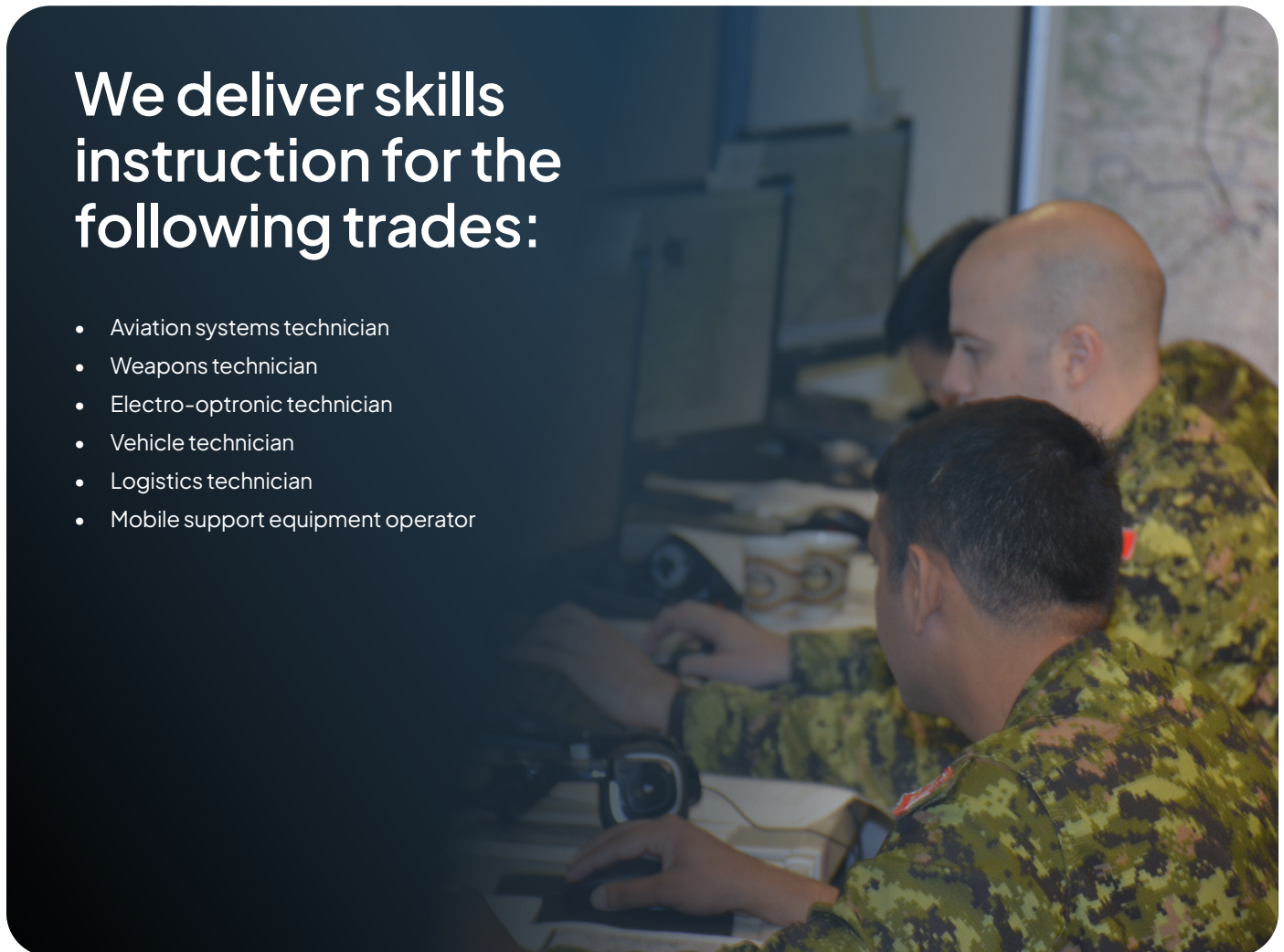
Practical Skills Evaluation

Once basic knowledge and understanding is developed, personnel in training need to put their knowledge to the test with practical skills evaluation. We provide highly qualified instructors who deliver technical skills evaluation for a range of RCAF and technically focused trades, and others who deliver practical skills evaluation for trades like mobile support equipment operators.

For junior officers and senior non-commissioner officers in the Canadian Army, Calian provides practical evaluation of platoon and sub-unit level leadership for a range of trades in the combat arms and combat support, including armour, artillery, engineering and small uninhabited aerial vehicle (UAV) teams. Providing practical skills evaluations for the field-force is essential to preparing leaders for the challenges they will face on duty during real operations.

We deliver skills instruction for the following trades:


- Aviation systems technician
- Weapons technician
- Electro-optronic technician
- Vehicle technician
- Logistics technician
- Mobile support equipment operator



Immersive Skills for Individuals

Virtual reality, augmented reality and mixed reality solutions leverage the latest technology to provide the most realistic simulation-based training experience possible. Immersive solutions put the military trainee in a highly realistic environment and simulate the tools and equipment for job-specific tasks. With process-focused learning, the military trainee learns how to complete occupational tasks under a variety of conditions, with available automated voice recognition to test voice procedure for tasks that involve clear, structured communications.

Calian mixes the latest hardware and the expertise and experience of our developers to deliver the most realistic training experience possible. Immersive solutions train military personnel faster than relying on live training or classroom training alone. The immersive nature of the experience keeps military trainees more engaged—and engaged for longer—compared to the alternatives. Immersive solutions are also cheaper and safer than live training. Training scenarios can be repeated over and over again to solidify training up-take, without using expendable resources like fuel and ammunition and without the wear-and-tear on equipment that happens in training. Immersive solutions also reduce the risk of training accidents to virtually zero, safely preparing trainees for the job.



Calian has delivered immersive military training solutions for:

- Replenishment-at-sea for the Royal Canadian Navy (RCN)
- Concept visualizer for RCN planning
- Joint terminal attack controller (JTAC) for the joint force

Live Training Effects

Realistic training is the most impactful. For live training, Calian delivers a movie-quality experience with weapons effects like smoke and blast sounds, and medical effects for role players that simulate combat injuries. We also deliver role players for adversary personnel for combat operations, local political leaders, religious leaders, business owners and civilians for complex urban operations.

Our training effects are often combined to give military personnel the feeling of being on operations while conducting live training at home. This advanced training experience prepares military personnel for the challenges they will face on operations, keeping them at a high state of readiness.

Large exercises:

- Delivering exercises with up to 12,000 participants.
- Delivering 15 to 20 large, complex exercises for the CAF every year with between 200 and 600 participants.
- Delivering four to six complex exercises for NATO every year with between 800 and 5,000 participants.
- Delivering domestic operations and major event security (G7 Summit, Olympic Games) exercises.



End-to-End Delivery of Large, Complex Exercises

Large, complex exercises are essential for developing and validating the skills and experience of commanders and leaders. Focusing on the combined arms team—from the field to the headquarters—means connecting many simulation and operational systems to simulate the complexity of the modern operating environment.

Calian has been delivering large, complex exercises for the Canadian Army for almost 30 years. We take an end-to-end approach to training. We start at the design phase, developing concerns and scenarios, and integrating the right technology to meet the training objectives. Relying on a mix of proprietary and open-source technology, we connect constructive, virtual and live simulation systems to deliver a “train-as-you-fight” training experience.

Most militaries lack the available personnel to deliver all aspects of large, complex exercises. This work is personnel-intensive and relies on a complex suite of technology. By relying on Calian, the Canadian Army minimizes the number of mid-rank leaders required to prepare and develop complex training, leaving them available for operations or their own advanced training. Our military customers often tell us “we couldn’t do this without you,” and that is a responsibility we take seriously.

We provide a turn-key experience for designing, developing and delivering large, complex training exercises. Our approach builds readiness more efficiently and effectively than any other military-only approach available.

The Calian end-to-end training capability is a differentiator for CAF to train its own personnel and to contribute to NATO exercises. This approach relies on a blend of proprietary and industry-standard technology to bring the right experience for any military audience. Calian’s training capability is a strategic differentiator for the CAF, and for Canada’s contribution to its allies through NATO.

Calian Military Training Technology

Calian relies on a blend of proprietary technology that was purpose-designed for training and operational applications and industry-standard tools used by NATO members. We use the right tools to meet mission requirements for training and command-and-control applications.

Virtual Command and Control Interface (VCCI)

We take a system-agnostic approach to connecting simulation and command-and-control (C2) technologies into a common environment. No matter which simulation or suite of C2 tools you use, VCCI connects them into a single environment—for training or operations.

Learn more: <https://www.calian.com/defence/military-training-simulation/vcci/>

MaestroEDE

MaestroEDE is Calian's innovative exercise design, development and delivery (E3D) software platform for large-scale military exercises. Using one end-to-end platform means all activity is structured, traceable and data driven. It provides a single user-friendly interface from concept to execution of large, complex exercises.

Learn more: <https://www.calian.com/defence/military-training-simulation/maestroede/>

Audio Distribution Service (ADS)

ADS provides a framework for integration, interoperability and virtualization of tactical and other voice networks. ADS enables data capture of up to 100 combat net radios (CNR) concurrently and requires no modification of client software or hardware on connected services.

Learn more: <https://www.calian.com/defence/military-training-simulation/ads/>

Performance Data for Immersive Solutions

Our immersive solutions provide highly realistic training, while capturing data on eye movements and voice recognition. Eye tracking and voice recognition propels interaction between trainees and technology and is a more cost-effective approach that relying on human instructors alone.

Learn more: <https://www.calian.com/defence/military-training-simulation/immersive-training-technologies/>

After-Action Review

Modern military exercises generate large volumes of data. Calian's proprietary tools enable visual and graphical representation of complex simulation data from military exercises, enhancing military training effectiveness.

Learn more: <https://www.calian.com/defence/military-training-simulation/aramis/>



Conclusions

People are the most important part of any military. As Canada increases its defence spending, personnel shortages continue.

Canada should prioritize domestic training capability, especially for simulation-based training to reduce its dependency on other countries for its defence supply chains. This should include investing in Canadian simulation-training capability. Having a thriving domestic simulation-based training sub-sector means the CAF can

rely on homegrown technology, solutions and capabilities to prepare military personnel for the challenges they will face on operations.

Investments in domestic training capabilities are essential to addressing personnel shortages today, and for sustaining readiness in the future. Having this capability at home is important to limiting reliance on friends and partners to train our military.



References

1. Murray Brewster, 'Leaked Canadian military report shows many new recruits are quickly leaving,' *CBC News*. 16 May 2025.
2. Joe Saballa, 'Canadian Military's Cyber Force Lacks Training, Personnel: Report,' *The Defense Post*. 22 February 2024.
3. CAF Officials Outline Modernization of Recruitment Process — February 19, 2025,' Cable Public Affairs Channel (CPAC). 19 February 2025. <https://cpac.ca/headline-politics/episode/caf-officials-outline-modernization-of-recruitment-process--february-19-2025?id=31b2d650-3832-4c1b-b11d-1a1af3540f99>
4. Brewster. 2025.
5. Ibid.



For over 40 years, Calian has delivered mission-critical solutions when failure is not an option. Trusted worldwide, we empower organizations in critical industries to overcome obstacles, manage risks and drive progress. By combining the expertise of our people, proven industry insight, cutting-edge technology, bold innovation and global reach, we deliver tailored solutions that solve complex challenges. Headquartered in Ottawa, Canada, with over 5,000 people around the world, Calian's solutions protect lives, strengthen security, foster global connectivity and drive economic progress, making a lasting impact where and when it matters most.