

*The Royal Regiment of Canadian
Artillery*



*Le Régiment royal de l'artillerie
canadienne*

3000-1 (D RCA)

Dated as per electronic signature

Distribution List

MODERNIZATION NARRATIVE
THE ROYAL REGIMENT OF CANADIAN ARTILLERY (RCA)

References: A. BN to CCA_RCA Force Generation ISO Op REASSURANCE dated 16 July 2023

B. RCA Position Paper – Long Range Precision Fires dated 14 August 2023

C. Future Fires Concept (DRAFT) dated 23 August 2023

BOTTOM LINE UP FRONT:

- CCA is very happy with the RCA's approach to modernization, which is seen to be tremendously collaborative, focused and consistent.
- Without a doubt, the RCA – both Regular and Reserve Force alike – will be the most recapitalized Corps over the next decade.
- RCA efforts and narrative regarded by CA as extremely well-aligned with the Canadian Army Modernization Strategy (CAMS), with RCA documentation carefully nested and unity of messaging evident.
- FY 23/24 regarded as the "Year of Fires" by key stakeholders including CA HQ senior leadership, DLR, CALWC and DLFD, serving as an impetus to maintain momentum.
- The RCA's future is very promising – we are in high demand, our credibility as a Corps is very high, and it truly is a hugely exciting time to be a Gunner!

AIM

1. The Artillery has never been better positioned or supported than it is right now – the Army, the Army Commander and the CDS are all huge proponents of fires and know that a modern Army would not fare well on the battlefield without modern Artillery. This has been reinforced in spades by the war in Ukraine, and there is no doubt that failure to evolve is pursued at our collective peril. Of the Army Commander's Top 3 procurement projects, Indirect Fires Modernization (IFM) is #2 and Ground Based Air Defence (GBAD) is #3. This speaks volumes

to the value proposition the Artillery offers to the Army, to the CAF and our Allies at a time when global security is wildly fluid, dynamic, and uncertain.

2. While we have so very much to be proud of, substantially daunting tasks lie ahead to ensure that the artillery possesses the mobility, lethality, and survivability to deliver guaranteed battle-winning effects against a peer adversary. We are facing in a strategic environment whereby defence is challenged by national healthcare, housing and debt demands, our department is being looked at as a significant contributor to required budget cuts, the CAF is severely under-staffed for its institutional and operational tasks, and the Canadian procurement process slows modernization efforts.

3. We simply need to acknowledge these realities, focus on priorities, and keep our eye on the prize – with the prize being the most recapitalized Corps in the Canadian Army over the next decade or so. Re-focusing on the positive, the RCA’s future is very promising – we are in high demand, our credibility as a Corps is very high, and it truly is a hugely exciting time to be a Gunner.

4. This said, the importance of a unified, focused RCA modernization narrative cannot be understated. With multiple lines of effort being addressed concurrently with a view to force generating (FG) modern, relevant, and credible fire support to the Canadian Army (CA), the RCA must speak with one voice as it applies to a currently evolving and future Royal Regiment. Understanding that updates and key messaging may not be distributed pan-RCA – to include our Army Reserve and retired Gunner communities – it is my intent to flatten Regimental communications with a regularly updated modernization narrative that is intended to reinforce strong RCA messaging and Artillery-centric engagements.

5. This said, the aim of this document is to provide an update and key messages for priority RCA modernization lines of effort with a view to ensuring alignment across The Royal Regiment and minimizing stray voltage and good ideas with already under-staffed, over-tasked supporting organizations. This document will supercede the previous RCA Strategic Capabilities Assessment (SCA) and serve as our modernization centre of gravity moving forward.

INDIRECT FIRES MODERNIZATION (IFM)

6. The IFM project is now in the Options Analysis phase. While IFM is still not yet funded, the identified indirect fires gap was highlighted by CCA as his number one priority. DLR 2 is developing a recommended option for CAF to implement once funding is provided by new government policy. This project has identified the need for new self-propelled howitzers to be fielded across the RCA that meet the range, lethality, mobility, and survivability requirements to provide fire support to Canadian or multinational brigade. The project will continue to develop two options:

- a. A common fleet of medium 155mm 52 calibre self-propelled (SP) guns; and
- b. A mixed fleet of medium 155mm 52 calibre guns with a light SP artillery capability (likely 120mm mortar).

7. The CA's Future Fires Concept is currently being staffed for CCA signature and project work for IFM and Long-Range Precision Fires, and the Loitering Munitions (LM) Urgent Operational Requirement (UOR) is underway. As a result of Chief of Staff Army Strategy (COS Strat) direction, DLR 2 also recently drafted a Statement of Capability Deficiency (SOCD) for SP Howitzers to address a flagged Army capability gap for Op REASSURANCE.

8. With a UOR for this capability announced by CCA during Army Week 2023, it is possible a small quantity of self-propelled systems (as many as 20 guns) *could* be acquired ahead of the delivery of the full IFM project. This interim capability would not only equip the RCA with highly lethal, mobile and survivable guns, but also provide an exceptional opportunity to better develop its understanding as to how modern, automated guns can support a formation. A decision has not yet been made with respect to how or where the M777 would be redistributed.

CURRENT STATE OF THE C3 FLEET

9. It is acknowledged that the current state of the C3 fleet is concerning from an attraction and retention perspective, and that it may seem that Army Reserve (ARes) challenges are simply being parked in light of an impending significant uptake in RCA force generation (FG) requirements effective Summer 2024. The reality is that ARes equipment challenges are much more complex than is likely understood and will require a united front and tactical patience to resolve.

10. First, it is important to note that the Army and the RCA have moved away from both the generation of Light Urban Search and Rescue (LUSAR) capabilities and the 81mm mortars as Reserve mission tasks. LUSAR was not resourced to meet the international qualifications mandated of personnel tasked to deliver this capability, resulting in the generation of inconsistent LUSAR output. The Strengthening the Army Reserves (StAR) order and light infantry battalion (LIB) directive introduced in 2017 tasked ARes Infantry units to force generate (FG) 81mm mortars, which are – from an IFM project perspective – considered organic fires best suited to the Infantry; the Infantry School is the official Centre of Excellence (CoE) for mortars.

11. Next, it has been confirmed by DLR 2 that industry is unable to provide components to Canada due to the complicated intellectual property issues surrounding the C3 howitzer. Industry is unable to obtain, to the satisfaction of PSPC, the intellectual property rights to manufacture C3 parts. Any resolution of this issue is simply beyond DND/CAF control. In any event, the team in Director Land Requirements (DLR) and ADM(Mat)/Director of Armaments Sustainment Program (DASPM) is focused on progressing projects towards acquiring new capability vice recapitalization of an obsolete fleet.

12. Beyond this, in the near-term, the RCA will endeavor to:

- a. **Consider the shifting of C3s across Divisions based on articulated training needs.** It has been flagged to Dep D RCA Reserves that if serviceable C3s need to shift around the country to support training, we need to solicit CA G3 support given guns fall firmly within Division Commander space. This demands forward planning by Dep D RCA Res, their Sergeants Major and ARes units, which we

did not receive in advance of RST 22 or 23. We cannot provide solution space if requirements are not adequately defined.

- b. **Leverage Op REASSURANCE as an attraction and retention tool for the ARes.** The RCA has staffed its comprehensive recommendation to CCA regarding what it can force generate on an enduring basis for the next 10+ years in support of this mission. We were very clear in our remit that the RCA will be highly flexible with respect to ARes augmentation (and possibly integration) based on the individuals volunteering to deploy, the risk willing to be assumed by the RCA and the CA with respect to qualifications and the desired FG intent by LMDs. While this is firmly Divisional space and approach will differ by Division and likely by rotation, the RCA will strongly message a “One Team” approach.
- c. As we understand what future Artillery capabilities will be pursued (SP guns, potential LRPF system, etc), **optionality with respect to roles for RCA ARes units will need to be carved out.** This will simply take time. It has taken decades to get to our current situation, we will unfortunately not solve current challenges in the near-term. This said, I am currently working on draft planning guidance to initiate RCA ARes Optimization planning, as discussed during the RCAA AGM. Intent is that this will be a collaborative effort, primarily driven by a planning group comprised of both ARes and Reg F key stakeholders and consulted periodically with the RCAA. Desired output would see an RCA recommendation to CCA with respect to a way forward pre-IFM gun system delivery to the ARes. This will take time to execute properly and we cannot rush to failure.

LONG RANGE PRECISION FIRES (LRPF) + LOITERING MUNITIONS (LM)

13. The CA has identified a requirement for a separate and distinct indirect fires capability to provide fire support to forces dispersed over greatly expanded areas of operation. The complexity associated with supporting dispersed forces over a large area requires systems that possess increased range, precision, scalable lethality, and mobility that are digitally connected and fully interoperable with allies.

14. Potential adversaries have artillery capabilities that presently significantly outrange CA capabilities – this is a known fact. The Army equally does not currently have the indirect fires systems to fight in large-scale combat operations. In the event of the invocation of an Article 5 response, Canadian soldiers and supporting allies would be at significant risk of adversary rocket and artillery strikes without any ability to return fire and defeat threats. This capability deficiency reduces the deterrent effect and credibility of the Canadian-led multinational brigade.

15. The LRPF system will provide highly responsive, all weather, 24/7, accurate, medium to long-range indirect fire against high payoff and time sensitive targets (TST), would provide support to both land and joint forces, including and above the Brigade level, and would fill the gap in range between existing CA gun artillery systems and longer-range naval and air support. Early indications as part of on-going future Artillery structures analysis efforts are that modernization of the Artillery Corps, to include the acquisition of LRPF systems, would see a

significant increase in lethality. Current M777 datasets see 3 rounds per gun fired within 180 seconds, with a total volume of fire of 12 x 155mm rounds fired. It is anticipated that a future 155mm system will see 20 rounds per gun fired within 180 seconds and a rocket artillery salvo within 2 minutes, equaling a total volume of fire of 240 x 155mm rounds and 36 x rockets fired.

16. It is the RCA's perspective that unfunded projects such as IFM, LRPF and LM should continue into Options Analysis to further mature our thoughts given their importance to the CAF Force Capability Plan (FCP). Moreover, these capabilities have been proven as battle-shifting capabilities in the war between Ukraine and Russia and – as a result – several of Canada's allies have recently announced acquisitions of LRPF systems, to include Poland, Romania, Netherlands, Denmark, Australia, Estonia, and Lithuania, while the United States has donated upwards of 38 systems to Ukraine. The US Army is working on a new conventional fires strategy expected by the end of this year that is based on both what is happening in Ukraine as well as what US Army Pacific needs in terms of conventional fires, with the strategy underpinning long-range precision fires efforts.

17. We need to also think strategically about future acquisitions for RCA capabilities. Acquiring a system one year faster than another system has short term advantages but may be very challenging to sustain in the long-term from a spare parts, munition supply chain and interoperability perspective. What has been solidified with the Army is that LM cannot and should not replace artillery platforms like LRPF systems but rather augment conventional artillery and provide new and critical attributes to a formation.

18. The RCA in collaboration with DLR 2 has been examining LRPF since its inclusion on the Key Capabilities List (KCL) and FCP as well as in support of ongoing contributions to Defence Policy Update (DPU) development. Since the June iteration of Army Capability Development Board (ACDB), the RCA has undertaken additional analysis to better understand not only what these systems can bring to the battlespace but also the demands or impact they might have on The Royal Regiment and the Army as a whole.

19. The LRPF project is consulting with key stakeholders within the department and is preparing final documents for Defence Capability Board (DCB) 1 in Fall 2023.

JOINT FIRES MODERNIZATION

20. The JFM project will digitalize fire command and control processes including planning, coordination, and execution of joint fire support tasks within the CAF, as well in cooperation with coalition partners from both the American, British, Canadian, Australian, New Zealand (ABCANZ) Armies Program and the North Atlantic Treaty Organization (NATO). Components of the JFM project include Fires Command and Control (C2) and Targeting Software, dismounted tactical equipment suites for Forward Observation Officer (FOO) parties, and simulation systems designed to enhance operator proficiency through resource efficient training. JFM is intended to achieve Initial Operating Capability in 2026-2027.

21. The JFM project will revolutionize the way the RCA plans and conducts fire support operations. Digitalizing the sensor to shooter link and fires command and control will automate

many processes and realize efficiencies, rendering some legacy concepts and functions obsolete. Moreover, fire support operations in a dispersed area of operations with access to a range of effectors including cannon artillery, loitering munitions and LRPF, will require a shift in thinking, doctrine and TTPs. The increased emphasis on interoperability and interchangeability will also drive the requirement for RCA fire supporters – Reg F and ARes alike – to be immediately ready to conduct operations in a multinational environment from a technical and doctrinal interoperability perspective.

AIR DEFENCE

22. The GBAD project will deliver two batteries of Air Defence which will be integrated into the 4th Artillery Regiment (General Support) (4 Regt (GS)). The project has a primary threat set consisting of Rockets, Artillery and Mortar, Air to Surface Missiles and Bombs and Class 1 & 2 Uncrewed Aerial Systems (UAS). The GBAD capability will also have a secondary threat set consisting of fixed and rotary wing aircrafts, as well as some cruise missiles.

23. The exact configuration of the GBAD batteries remains to be confirmed, but it is expected that it will consist of a soldier portable VSHORAD capability and a SHORAD capability. Together, the two systems will effectively cover the complete threat set as well as provide a layered air defence solution with overlapping effective ranges. The system will also include munitions, sensors, command and control, logistic support as well as a new building for 4 Regt (GS). The GBAD Project is planning to enter Implementation in 2026 and could be delivering equipment in 2027/28 to achieve IOC.

24. In addition to the GBAD project, the current situation in Ukraine has resulted in the creation and development of an Air Defence Urgent Operational Requirement (AD UOR) aimed at establishing an interim capability ahead of the GBAD project delivery. The project is focused on the delivery of Soldier Portable Air Defence System. The intent is to deliver equipment sufficient to equip a troop deployed to Latvia as well as a troop for training in Canada. AD UOR should award a contract in 2024 and is expected achieve IOC in 2024-2025.

LAND ISR MODERNIZATION

25. The Land ISR Mod project will provide the RCA and CA the means to make sense of an information-drive battlefield and defeat the adversary's fires systems. The importance of well-integrated ISR to contemporary major combat operations has been clearly demonstrated in the Russo-Ukraine War. The integration of different sensors with C2 and fires to defeat an enemy outside of direct fire range and to conduct counter-fire operations has been demonstrated to be a crucial factor in battlefield success. The RCA and the CA presently have non-digitalized ISR and counter-fire systems that are required to be properly integrated to enable success in the contemporary operating environment.

26. The project will address obsolescence issues with the full suite of STA-equipment currently in use. For Close Support STA Btys, the project will replace the LCMR with a more mobile, longer-range counter-fire radar that is programmable to detect projectiles as well as UAS and land-based targets. The AWLS will be replaced with another passive weapons locating

system that will reduce the effort and number of personnel required to operate it. The Raven B MUAS will be replaced with a longer-ranged, vertical-take-off-and-landing (VTOL) UAS more suited for long-range aerial reconnaissance, target acquisition, and adjusting fires.

27. General Support STA Btys will receive improvements to the in-service MRR and SUAS. The MRR will receive a mid-life upgrade beginning with increased counter-fire detection range and then address a number of human interface issues such as the lack of an operator workstation and access to the system. The SUAS will see additional air vehicles acquired to provide redundancy to the capability in combat as well as additional payloads, SAR/GMTI for instance, to provide even more capability.

28. This project will also provide significant improvement to the formation's C2 of ISR assets. Until now, planning staff and commanders have relied entirely on ad hoc solutions to plan, task, manage, and visualize ISR reporting. Land ISR Mod will provide a suite of ISR C2 software that will address these issues in a coherent manner so that CA staff will not be using MS Excel to synchronize complex, multi-day ISR tasks. Beyond this, it will provide significant computing and communications equipment to ensure sensors and C2 nodes are properly connected to enable near real-time transmission of data.

29. From a timelines perspective, it is anticipated that the project will enter the Definition phase in April 2024, Implementation phase in 2028, initial operating capability (IOC) in 2030 and full operating capability (FOC) in 2032. September 2023 saw the commencement of the Initial Planning Meeting to refine the Ministerial Submission in advance of the Project Management Board and project approval.

COUNTER UAS (C-UAS) URGENT OPERATIONAL REQUIREMENT (UOR)

30. In Summer 2022, DLR 2 was directed to initiate a UOR project to acquire C-UAS systems. This project will deliver a range of electronic warfare-based C-UAS devices for the CA, RCN, RCAF and CANSOFCOM. Dismounted directional and omni-directional systems will be fielded across the formation (IAW the Managed Readiness Plan) and to Op REASSURANCE by January 2025. These systems will also be allocated to RCA units, at least initially, to enhance their organic force protection capabilities.

31. This project will also acquire a vehicle-based integrated C-UAS system that will be deployed on Op REASSURANCE in a troop-sized organization. The current intent for this capability is that the Close Support Regiment's STA Batteries will serve as the backbone for this capability as it is stood up. This technologically complex but very simple to use capability will present an exceptional opportunity to integrate ARes members from the RCA and other MOSIDs and will provide meaningful opportunities to deploy on Op REASSURANCE. The mounted C-UAS Troop capability is expected to achieve Initial Operating Capability in 2025.

RCA FORCE GENERATION IN SUPPORT OF OP REASSURANCE

32. Since 2017, the RCA has contributed gun batteries, Airspace Coordination Centres (ASCCs), Air Defence Cells (ADCs), Artillery Tactical Groups (ATGs) Fire Support

Coordination Centres (FSCC) and Joint Fires Coordination Centres (JFCC) to Op REASSURANCE via the eFP BG. These contributions have been both episodic and sustained in nature. Other troop contributing nations (TCNs) have also provided similar capabilities to the eFP BG, resulting in occasional surpluses of fire support capabilities at the BG level. This said, given Canada's status as Framework Nation (FN), the RCA has assumed responsibility for the coordination of all allied fire support assets deployed into the Latvian AO.

33. With the Latvian-based eFP BG growing to a Brigade over the next 12-18 months, there exists a requirement to establish Artillery command and control (C2) at the Brigade level. This growth, based on the recommendations provided at reference A, will likely manifest in the form of an Artillery Battalion Group (Arty Bn Gp) that will execute joint fires and land targeting for the formation while contributing to JISR operations. This organization is viewed as critical to ensuring common TTPs, SOPs, safety, training and operational standards are rapidly established and implemented. With diverse weapons/sensor platforms, different natures of ammunition and operational/training safety protocols and varying degrees of the digitization and digitalization of fire control systems, the complexity of this task cannot be understated.

34. The proposed Arty Bn Gp – which could see as many as 275 Gunners deploy each rotation – presents a suitable C2 structure given current resource constraints (personnel cap, equipment and funding) that will set the conditions for other troop contributing nations to effectively and safely integrate into the MN Bde. Consolidating assets will ensure that the principles of economy of effort and concentration of force are achieved while delivering on the Government of Canada commitment to provide a combat-capable formation that boasts enhanced credibility, improved lethality and flexibility to incorporate fly-over capabilities and future MN contributions. This structure was very well-received by the Army and was briefed as part of the 6-7 September Force Sensing Conference in Latvia, with efforts having commenced with respect to Canadian staffing contributions for rotation 24-02.

35. Force generation (FG) for this proposed structure will tax RCA units to their maximum capacity based on establishments as well as current and projected staffing percentages. While the bulk of this battalion group will be sourced from Regular Force RCA and 6 Canadian Combat Support Brigade (6 CCSB) units, it is expected that there will also be enduring contributions from Army Reserve units and other troop contributing nations (TCNs), with the notable example being the FG of an ARes-only force protection (FP) Pl¹ from 5 Canadian Division on an enduring basis. This anticipated mix of both personnel (Reg F and ARes) and equipment (weapon/sensor platforms and their unique CSS tails) will demand significant investment and constant re-assessment to actualize the full potential of these enablers in support of the MN Bde.

CULTURAL MODERNIZATION

36. Last, but certainly not least, the changing threat environment has also resulted in a threat that is internal to our organization. The CAF has demonstrated an inability to evolve its culture apace with society's expectations, harming many of our teammates and leading to a loss of confidence in our institution. As the RCA modernizes to address a dynamic and constantly

¹ Tasked to provide FP to 6 CCSB low density, high profile enablers.

evolving operating environment, it will also continue to address harmful behaviours within our ranks.

37. Harmful behaviours including sexual misconduct, hateful conduct, discrimination, harassment, violence, and abuse of power must be addressed with urgency, as these behaviours undermine morale, discipline and cohesion, degrading operational effectiveness. Aligned with departmental and CA efforts, the RCA will continue to support professional conduct and culture change initiatives through deliberate and sustained actions that will result in credible and enduring changes across the RCA. Leaders across The Royal Regiment must listen, understand and learn from each other at a level we are not culturally accustomed to as we collectively focus our efforts to reform, strengthen and optimize our professional conduct and culture, ensuring that we take care of all of our members. This involves the provision of meaningful feedback to others and cultivating relationships within our organizations, and this is a no fail mission that might mean learning new skills as leaders to get it right.

38. This will necessitate continuous RCA leadership focus and support through initiatives like the RCA Odessey mentorship program, the Regimental Leaders Course and D RCA Leadership Symposium, and continued transparency as it applies to RCA succession planning and talent management. Like any family, our Regimental family must continue to rally through frank self-reflection, openness to alternate perspectives and ways of doing business, continued excellence on operations, innovation, and commitment to fostering a safe, respectful and healthy workplace, always. This is easier said than done, and requires leadership, moral courage, a principled approach, over-communication, and a strong network of support. Fully committed, we will evolve our culture, ensuring that we maintain a safe and respectful workplace where all of our members are valued, enforcing the principles of our professional conduct codified in the newest version of Duty with Honour: Duty, Integrity, Loyalty, Courage, Stewardship, and Excellence.

CONCLUSION

39. Whether Regular or Reserve Force, serving or retired, I would ask that every Gunner familiarize themselves with our significant modernization efforts and do their part in reinforcing the considerable successes achieved to date. For Regular Force and ARes RCA Command Teams, this means sharing this narrative with your leaders, your soldiers and our Honorary community.

40. While solutions pursued are not perfect, they aim to deliver relevant, credible and modern fire support capabilities to the CA and NATO, and we must keep our eye on the prize in this regard. I want to reassure the broader Gunner community that RCA equities are 100% front and center at the operational and strategic levels on a multitude of fronts, and that we are leading the way with respect to modernization and visibility as it applies to capability development. This is truly the “year of fires”, and I expect us to continue to move yardsticks significantly forward with key stakeholders. It is never fast enough, but our momentum is undeniable.

K.L.A. Bouckaert
Colonel
Director of Artillery

Enclosures: 1 (Modernization Benefits Placemat – RCA Example)

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