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## Enabling the Next Canadian Army: Reorganization of Canadian Army Engineers

Anonymous

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#### Service Paper

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**Enabling the Next Canadian Army: Reorganization of Canadian Army Engineers**

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# **Enabling the Next Canadian Army: Reorganization of Canadian Army Engineers**

## **AIM**

1. The purpose of this paper is to provide recommendations for a reorganization of Royal Canadian Engineers (RCE) within the Canadian Army (CA). These recommendations are intended to augment the CA's current review of formations and tasks with the goal of achieving "an optimized structure".<sup>1</sup>

## **INTRODUCTION**

2. The RCE are currently employed inefficiently as evidenced by a lack of consistency in force development spanning taskings, doctrine, equipment, and training. Efforts to modernize, though well intentioned, do not reflect a long term strategy, but are often bottom up driven, short term, and incomplete. This inefficiency has impacts on RCE readiness and the provision of support to the CA and Canadian Armed Forces (CAF). The CA is presently organized into four divisions and one training formation. However, the CA only has the strength of approximately two divisions worth of personnel.<sup>2</sup> Further, the CA is presently operating under fiscally constrained conditions,<sup>3</sup> reducing the likelihood of obtaining new capabilities. It is recommended that the CA centralize engineer command authority to increase responsiveness, stabilize proficiencies, and maintain readiness in support of the CA.

## **DISCUSSION**

### **CURRENT ORGANIZATION**

3. Regular Force (RegF) RCE units are presently organized into three combat engineer regiments (CER), one engineer support regiment (ESR), and one training establishment (TE). Each CER is organized under full command<sup>4</sup> of a Canadian Mechanized Brigade Group (CMBG). The ESR is organized under full command of the Canadian Combat Support Brigade (CCSB). The RCE's TE, the Canadian Forces School of Military Engineering (CFSME), falls under full command of the Combat Training Centre. Primary Reserve (PRes) RCE units are organized into ten CERs, one to each reserve Canadian Brigade Group (CBG). RCE units, both RegF and PRes, are presently understrength. Annex A contains a current disposition of CA engineer units.

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<sup>1</sup> According to the Commander of the Canadian Army (CCA) the "Organizational structure changes may include the creation, renaming, re-rolling, and amalgamating of CA organisations (sic)..." Canada, Department of National Defence, "Commander Canadian Army's Planning Guidance for CA Modernization," Directive (Ottawa: Canadian Army Headquarters, November 26, 2024), 5.

<sup>2</sup> According to Military Command Software (MCS) the CA has approximately 49,400 personnel. The average strength of a Canadian Division during the Second World War was 18,000 personnel; C.P. Stacey, "The Canadian Army, 1939-1945: An Official Historical Summary," (Ottawa: King's Printer, 1948), 67.

<sup>3</sup> Murray Brewster, "Government Cost-Cutting Blows \$150M Hole in Army's Equipment Maintenance Budget," *CBC News*, August 14, 2024, <https://www.cbc.ca/news/politics/canadian-army-equipment-maintenance-1.7293634>.

<sup>4</sup> The chain of command is responsible for both administrative requirements and activities of subordinate organizations. In the absence of any other applicable command relationship (e.g. operational command, operation control, etc.), no other chain of command may direct the activities or administration of these subordinate organizations; Canada, Department of Defence, "Canadian Forces Joint Publication 01 Canadian Military Doctrine 2nd Edition" (Canadian Joint Warfare Centre, May 24, 2024).

## NON-ENGINEER SPANS OF CONTROL & SECONDARY DUTIES

4. Occupational standardization between engineer units is presumably achieved by common basic engineer training, doctrine, and equipment. Similarly, low level coordination between engineer units is attempted by direct liaison. However, a formal engineer formation headquarters does not exist. Thus, higher-level coordination and longer term planning for engineer force development is endeavored through a 'virtual staff'. This staff is constituted by several engineers who hold non-engineer command and staff positions.

5. During CA reorganization following the Second World War, the position of Director of Royal Canadian Engineers (Dir RCE) was established as a primary responsibility within the CA HQ and included a Directorate, complete with an engineer staff (nine personnel).<sup>5</sup> However, over the decades this position has been diminished. Today, Dir RCE is often a commander of a non-engineer formation or holds a non-engineer staff position in the CA. Engineer leadership and capability management is therefore a *secondary* responsibility (hence virtual). Previous positions held by Dir RCEs include command of Canadian Division Support Groups (CDSGs) and divisional Chiefs of Staff (COS). The current DDir RCE is employed primarily as the CTC Commander for which they have *ten* subordinate non-engineer units which is, in and of itself, well outside a reasonable span of control of three to four units.<sup>6</sup> Dir RCE is aided in their duties by a deputy (DDir RCE), however this member is traditionally the commandant of CFSME for which they have, on average, *nine* direct reporting sub-units,<sup>7</sup> also pushing them beyond the limit of a reasonable military span of control of about three to four sub-units.<sup>8</sup>

## INADEQUATE AUTHORITIES

6. The Dir and DDir are enabled, to some extent, by engineers spread across the CA and CAF. For instance, the CA's Engineer Support Coordination Centre (ESCC) is staffed by one member as a *secondary* duty (their primary post is the CA HQ's G34-2). Similarly, engineer human resource management is executed on behalf of the Corps by the Career Managers (CM) who are posted to Director Military Careers (D Mil C) and engineer equipment acquisition is managed through Directorate Land Requirements (DLR 7). However, neither Dir RCE nor DDir RCE have formal command authority over the CERs, ESR, the CMs, DLR 7, and CA G34-2. This constraint on the CA's engineer

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<sup>5</sup> A.J. Kerry and W.A. McDill, *The History of The Corps of Royal Canadian Engineers. Volume 2: 1936-1946*, vol. 2. (Ottawa: Thorn Press, 1966), 548.

<sup>6</sup> The following units report directly to the CTC Comd: CTC HQ, Royal Canadian Armoured Corps School (RCACS), Royal Regiment of Canadian Artillery (RCAS), Infantry School, Tactics School, Canadian Forces School of Military Engineering (CFSME), Canadian Army Trials and Evaluations Unit (CATEU), Canadian Army Advanced Warfare Centre (CAAWC), Royal Canadian Electrical and Mechanical Engineer School (RCEMES), and Canadian Forces School of Communications and Electronics (CFSCE); a reasonable span of control for a formation is three to four battalions (units), David S. Alberts and Richard E. Hayes, "Power to the Edge: Command...Control...in the Information Age," (Command and Control Research Program), April, 2005, 42-43.

<sup>7</sup> The following sub-units report directly to the CFSME Cmdt: Headquarters, Standards and Training Development Squadron, Administration Squadron, Reserve Engineer Training Squadron, Field Engineer Training Squadron, Tactics Squadron, Explosive Ordnance Disposal Squadron, Construction Engineer Training Squadron, Construction Engineer Management Squadron.

<sup>8</sup> David S. Alberts and Richard E. Hayes, "Power to the Edge: Command...Control...in the Information Age," (Command and Control Research Program), April, 2005, 42-43.

capability is noted by Dir RCE, who stated at one 2018 RCE Conference that “there is no permanent staff/HQ dedicated to support the Corps on a daily basis. For all the staff, this is a part time duty and the major impact is that *things are not moving fast* [emphasis added]”.<sup>9</sup>

7. In place of a formerly constituted staff, the Dir RCE often also assigns responsibilities on an ad hoc basis to units to generate institutional solutions for the Corps. This is problematic when taking into consideration the high rate of leadership rotation in the CA.<sup>10</sup> For instance, in 2022, Commanding Officer (CO) 1 CER was tasked to look into the system for Commissioning from the Ranks (CFR),<sup>11</sup> however this was something that was already completed by CO 4 ESR in 2019.<sup>12</sup> In addition to command turnover, COs are not technically beholden to Dir RCE. Although the RCE can make plans and attempt coordination, authority “is not owned by the Corps as the risk lies with COs and their Bde.”<sup>13</sup> With no bespoke staff and a high rate of turnover within the virtual staff, it is difficult for the Corps to plan for the long term.

8. An indication of the limitations placed on enduring CA engineer planning is perhaps best demonstrated by the RCE Campaign Plan, a document that was last drafted in 2012 and promulgated in 2014<sup>14</sup>. This is problematic because there have been two new significant national defence policies<sup>15</sup> and a modernized CA Managed Readiness Plan (MRP)<sup>16</sup> released since its publication. Further, decisions are made regarding equipment for which the Corps does not technically have the authority to manage. For instance, in 2018 the virtual staff knew that Expedient Route Opening Capability (EROC) would be modernized and that a new platform would be fielded, starting with 4 ESR.<sup>17</sup> In 2022, a

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<sup>9</sup> Canada, Department of National Defence, “Record of Discussion - Director Royal Canadian Engineers Conference 4-5 February 2019” (Burton, New Brunswick, May 8, 2019), 1.

<sup>10</sup> Genevieve Bonin et al., “Culture Change Can Fix the Talent Shortage in the Military,” August 16, 2023.

<sup>11</sup> Canada, Department of National Defence, “Record of Discussion – Director Royal Canadian Engineers Conference 25-26 October 2022” (Burton, New Brunswick, October 25, 2022), 5.

<sup>12</sup> Canada, Department of National Defence, “Record of Discussion - Director Royal Canadian Engineers Conference 4-5 February 2019” (Burton, New Brunswick, May 8, 2019), 19; Canada, Department of National Defence, “Guidance for Commanding Officers: Non-Commissioned Member Selection for Commissioning” (Director Royal Canadian Engineers, August 16, 2019). Similarly, CO 2 CER was assigned the responsibility to examine ‘*Light Engineers*’ at the same time CFSME was tasked to do very similar work the CA’s Directorate of Land Force Development (DLFD) to develop engineer support for the new employment concept for the *light* infantry battalions; Canada, Department of National Defence, October 25, 2022, 11.

<sup>13</sup> Canada, Department of National Defence, “Record of Discussion - Director Royal Canadian Engineers Conference 4-5 February 2019” (Burton, New Brunswick, May 8, 2019), 11.

<sup>14</sup> Canada, Department of National Defence, “Publication of the Royal Canadian Engineers’ Campaign Plan 2014 (Cover Letter)” (Director Royal Canadian Engineers, September 2014).

<sup>15</sup> Canada, Department of National Defence, “Our North, Strong and Free: A Renewed Vision for Canada’s Defence,” April 8, 2024, <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/north-strong-free-2024.html>; Canada, Department of National Defence, “Strong, Secure, Engaged: Canada’s Defence Policy,” navigation page - audience page, 2017, <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/canada-defence-policy.html>.

<sup>16</sup> Canada, Department of National Defence, “Evolved Managed Readiness Plan - Cycle 24-27” (Canadian Army Headquarters, n.d.), accessed January 17, 2025.

<sup>17</sup> Canada, Department of National Defence, “Meeting Minutes Doctrine Equipment Research & Development and Training Working Group (DERTWG)” (DLR 7, April 19, 2018). 12-14.

decision was made by the Corps to centralize EROC at 4 ESR,<sup>18</sup> yet no vehicles have been moved on account of authority residing solely in the CA, divisions, and brigades. Though these decisions are made in the best interests of the RCE, all of these tasks are assigned outside of the engineer units' formal chain of command. An engineer formation headquarters could support institutional memory and increase responsiveness for capability management, including equipment redistribution.

9. The process for identifying and sourcing positions for operations can be inefficient. CAF tasks are generally created and sourced through Military Command Software's (MCS) Canadian Forces Tasking, Plans and Operations (CFTPO) application. When an engineer unit is identified for operations in accordance with the CA's Managed Readiness Plan (MRP), taskings are generally straight forward. However, when tasks cannot be filled by the unit, they are sometimes deferred back to brigade, division, CA, and, if necessary, other LIs. This process reduces the amount of time an identified member has to complete pre-deployment training, adversely impacting operational readiness.<sup>19</sup> Centralizing authority within one engineer formation would increase responsiveness to the operational requirements of the CAF.

## DEGRADED PROFICIENCIES

10. Adherents to the current CA model will contend that centralization of engineer command authority could adversely impact combined arms readiness. Indeed, the integration of arms is fundamental for CA success in the contemporary operating environment. Military theorist Dr. Martin van Creveld stresses that self-containment leads to greater cohesion, cost-effectiveness, and reduces planning time.<sup>20</sup> Similarly, combined arms training contributes to "mutual confidence, cohesion and collective discipline".<sup>21</sup> However, CERs often participate in large brigade level collective training in which engineer proficiencies are not fully exercised and their readiness subsequently diminishes. For instance, the Army Lessons Learned Centre observed during an iteration of Ex MAPLE RESOLVE that engineers were employed inefficiently in "all-arms tasks"<sup>22</sup> at the expense of their specializations. During another iteration of Ex MAPLE RESOLVE, 27% of all *unobserved* Battle Task Standards (BTS) and 38% of all *incomplete* BTS were engineer specific.<sup>23</sup> Consequently, centralization of engineers should strike a balance between the amount of time a CER spends seconded to a CMBG and ungrouped (centralized) to practice and maintain engineer proficiencies.

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<sup>18</sup> Canada, Department of National Defence, "Record of Discussion – Director Royal Canadian Engineers Conference 31 January - 01 February 2022" (Burton, New Brunswick, February 2022), 1.

<sup>19</sup> Canada, Department of National Defence, "Operation UNIFIER Post Operation Report - Phase 1: Mounting and Deployment" (Joint Task Force Ukraine, September 11, 2023), A-2/4.

<sup>20</sup> Martin Van Creveld, *Command in War*, Book, Whole (Cambridge, Mass: Harvard University Press, 1985), 271.

<sup>21</sup> Canada, Department of National Defence, "B-GL-300-008 FP-001 Training for Land Operations" (Director Army Training, July 20, 2010), 1-9.

<sup>22</sup> Canada, Department of National Defence, "Lesson Synopsis Report - Exercise Maple Resolve 1501" (Kingston, Ontario: Canadian Army Doctrine and Training Centre, August 14, 2015).

<sup>23</sup> Canada, Department of National Defence, "Level 6 High Readiness Certification - 2 Canadian Mechanized Brigade Group Manoeuvre Units" (Toronto, Ontario: 4th Canadian Division Headquarters, June 16, 2017).

11. Although seemingly comparable in size to the CERs, CFSME has neither the equipment nor sufficient density of junior non-commissioned members to properly execute field training exercises. Calls to support the RCE's individual training are highlighted by eleventh-hour service level agreements (SLA) between CTC and the CMBGs on an ad hoc basis.<sup>24</sup> According to the Chief of Defence Staff's guidance concerning reconstitution, commands should expect to prioritize *individual* over collective training.<sup>25</sup> Therefore, centralization of engineer units would help to ensure this delivery of individual training by forecasting and streamlining support to the engineer TE.

#### CAF COUNTER-EXPLOSIVE THREAT CAPABILITY

12. Although the CAF Explosive Ordnance Disposal (EOD) capability management is joint in practice, its headquarters is manifested in an independent staff which is directly subordinate to CA HQ. The precursor to the CAF Joint Counter Explosive Threat Task Force (JCET TF) was Canadian Forces (CF) EOD which transitioned to the Counter-Improvised Explosive Device (C-IED) TF during Canada's involvement in Afghanistan.<sup>26</sup> Though officially responsible for explosive threat capability management, CAF JCET TF *does not have subordinate units* and, therefore, cannot exercise authority over the CER's EOD Troops, 4 ESR's CET Squadron, or CFSME's EOD Training Squadron.

13. In recent years, CAF JCET TF faced multiple challenges while planning and conducting the CA's principal CET training exercise, Ex ARDENT DEFENDER (Ex AD).<sup>27</sup> Centralization of CET within the RCE could reduce reliance on "tech netting to find possible support"<sup>28</sup> for CET collective training, increasing operational readiness for the CA's CET capabilities. Similarly, during combined arms collective training within the CMBGs, CET capabilities are sometimes relegated to lesser training experiences. For example, 1 CER noted during Ex ORNARY RAM and Ex MAPLE RESOLVE that "EOD and Search were grossly underutilized... [, there were] no clear scenarios... [, and] no activities in the rear areas of towns for C-IED soldiers to perform their skills".<sup>29</sup> The formation of a dedicated CET unit (regiment) within the CA would allow for consistency in program implementation, policy compliance, and ensure support for joint, multinational, and interagency CET exercises (e.g. Ex AD).

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<sup>24</sup> Canada, Department of National Defence, "Service Level Agreement Between 2 Combat Engineer Regiment and Canadian Forces School of Military Engineering for Basic Engineer Officer Course Developmental Period 1.2 Ex STALWART SAPPER" (Combat Training Centre, September 9, 2022); Canada, Department of National Defence, "Service Level Agreement Between 5 Regiment Genie du Combat and Canadian Forces School of Military Engineering for Basic Engineer Officer Course Developmental Period 1.2 Ex STALWART SAPPER" (Combat Training Centre, October 20, 2023).

<sup>25</sup> W.D. Eyre and Canada, Department of National Defence, "Chief of Defence Staff Planning Directive for Canadian Armed Forces Reconstitution" (National Defence Headquarters, July 9, 2021), 16.

<sup>26</sup> Canada, Department of National Defence, "Canadian Forces General Message (CANFORGEN) 178/07, Establishment of the C-IED TF" (National Defence Headquarters, 2007).

<sup>27</sup> Canada, Department of National Defence, "Record of Discussion – Director Royal Canadian Engineers Conference 26-27 October 2021" (Burton, New Brunswick, October 2021), 14.

<sup>28</sup> Canada, Department of Defence, "Canadian Armed Forces Exercise Ardent Defender 2021 After Action Report" (Ottawa: CAF Joint Counter Explosive Threat Task Force, February 9, 2022), A-5/11.

<sup>29</sup> Canada, Department of National Defence, "Exercise Ornergy Ram & Exercise Maple Resolve 2019 - 1 CER Post Exercise Report" (Edmonton, Alberta: 1 Combat Engineer Regiment, June 22, 2019).

14. A counterargument is that reformation of CAF JCET into a unit within the RCE would diminish the ‘joint’ nature of the TF. However, the TF *already resides within the CA*. Further, most individual EOD and C-IED training is conducted within CFSME and the CA’s only CET sub-unit is currently under full command of 4 ESR. Thus, the center of gravity of the CAF’s CET already resides at 5<sup>th</sup> Canadian Division Support Base *Gagetown*. The formation of a dedicated joint CET unit with an engineer brigade would increase the efficiency of EOD and IED related training, both individual and collective, and thus enhance CA and CAF readiness.

## **BRITISH ARMY ENGINEER COMMAND & CONTROL**

15. A vision to centralize engineer command authority which is manifested in a CA formation is perhaps best depicted by the British Army’s 8<sup>th</sup> Engineer Brigade. During the last two decades, the British Army consolidated most engineer units into one formation. Subordinate to the British Army’s Force Troops Command, the 8<sup>th</sup> Engineer Brigade comprises both close and general support capabilities which can be attached to other British Army formations as required.<sup>30</sup> This formation oversees both regular, reserve, and mixed CERs, works groups (infrastructure units), and EOD.<sup>31</sup> By centralizing these enablers under one authority, it is conceivable that British Army engineering proficiencies are maintained through purposeful training and capability management. As required, elements are drawn out of Force Troops Command (including 8<sup>th</sup> Engineer Brigade) to furnish “a wide range of capabilities”<sup>32</sup> for the UKs Reaction Force and Adaptable Force formations.

## **RECOMMENDATIONS**

16. We recommend a reorganization of CA engineers into one formation directly subordinate to the CA as follows:

- a. The formation of a Canadian Army Engineer Brigade (CAEB) HQ which is responsible for:
  - (1) Long term Army engineer planning and direction;
  - (2) Human resource management and succession planning;
  - (3) Consolidation and dissemination of engineer intelligence (such as current threat trends);
  - (4) Management of engineer equipment and explosives;
  - (5) Planning of collective engineer training (to be balanced against combined arms training, see point 2);
  - (6) The planning of engineer support to the CA;
  - (7) Development and maintenance of engineer doctrine; and
  - (8) Compliance of engineer training standards.

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<sup>30</sup> United Kingdom, “Transforming the British Army: An Update - July 2013” (Army Headquarters, June 10, 2014), [https://web.archive.org/web/20140610215557/http://www.army.mod.uk/documents/general/Army2020\\_Report.pdf](https://web.archive.org/web/20140610215557/http://www.army.mod.uk/documents/general/Army2020_Report.pdf), 10.

<sup>31</sup> United Kingdom, “Transforming the British Army: An Update - July 2013”, 12.

<sup>32</sup> United Kingdom, “Transforming the British Army: An Update - July 2013”, 32.

- b. The regrouping of 1 CER, 2 CER, 5 RGC, and 4 ESR under full command of the CAEB. Two RegF CERs would then come under an Operational Command (OPCOM)<sup>33</sup> relationship to two CMBGs during the phase immediately prior to and during “Committed to NATO”<sup>34</sup> phase. One CER would remain under command of the CAEB to execute engineer specific training and to support RCE individual training (CFSME) in preparation for employment under OPCOM to a CMBG. Under full command of the CAEB, 4 ESR would represent a depth and be ready to augment the two CERs attached to CMBGs in operations or augment CFSME with the delivery of individual training.
- c. CFSME will become attached OPCON to CTC.
- d. All ResF CERs would fall under full command of the CAEB. Most are understrength (the smallest has 90 personnel, effectively the size of a sub-unit).<sup>35</sup> While this would suggest that a regrouping would be prudent for economy of effort,<sup>36</sup> it is important to acknowledge the role that these units will play in forming the backbone of recruiting and mobilization for high-intensity conflict in the future.
- e. Dissolution of CAF JCET TF with the concomitant formation of a CAF JCET Regiment. This unit would be headquartered as a lodger unit at 5<sup>th</sup> Canadian Division Support Base Gagetown and:
  - (1) Assume the authorities of the former CAF JCET TF;<sup>37</sup>
  - (2) Assume full command of 43 CET Sqn (formerly within 4 ESR) and EOD Sqn (formerly within CFSME);
  - (3) Become a designated CA training establishment for EOD, Search, and C-IED;
  - (4) Plan and conduct individual and collective training, to include joint, multinational, and interagency CET exercises; and

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<sup>33</sup> Under OPCOM, CAEB would retain administration for the CER, including long term engineer capability management. CMBGs would maintain the ability “to assign missions or tasks to subordinate commanders, to deploy units, to reassign forces, and to retain or delegate operational and/or tactical command and/or tactical control”; Canada, Department of National Defence, “Canadian Forces Joint Publication 01 — B-GJ-005-000-FP-001 — Canadian Military Doctrine, 2nd Ed (2),” May 29, 2024.

<sup>34</sup> Canada, Department of National Defence, “eMRP.”

<sup>35</sup> According to MCS, 38 CER numbers on 90 personnel.

<sup>36</sup> It is conceivable that PRes CERs could be condensed into appropriately sized CERs within a PRes Combat Engineer Group. PRes CERs could be regrouped OPCOM or OPCON to CBGs on an as needed basis. Reserve Support Staff (RSS) could thus be reorganized into the CAEB as staff or return to RegF establishments. However, PRes units and armouries serve an important role in recruiting for mobilization efforts. For instances, during the Second World War, the Non-Permanent Militia “drew strength from traditions and esprit de corps of long standing”. C P Stacey, “The Canadian Army, 1939-1945 : An Official Historical Summary,” (Ottawa: King's Printer, 1948), 3. Therefore, it is recommended that they not be amalgamated in order to maintain their reach.

<sup>37</sup> Many responsibilities are outlined in Canada, Department of National Defence, “Defence Administrative Order and Directive 8000-1 Conduct of Explosive Ordnance Disposal” (National Defence Headquarters, December 20, 2013), <https://www.canada.ca/en/department-national-defence/corporate/policies-standards/defence-administrative-orders-directives/8000-series/8000/8000-1-conduct-explosive-ordnance-disposal.html>.

- (5) Force generate (FG) CET forces for the CAF.
- f. No units will move from their present locations. In order to remain responsive to supported CMBGs during preparation for and commitment to NATO phases of the MRP, CERs will remain in their respective locations. ResF CERs will remain in their respective locations to continue to garner public outreach and recruitment. The ESR and CFSME will remain at 5 CDSG. Without significant movements an there will be an attendant reduced cost of implementation.
- g. Maintain an Engineer Conference in the place of Dir RCE Conference to remain abreast of developments in Construction Engineering, Real Property Operations (RP Ops), and Geomatics (Geo).
- h. Establish a system of empirical assessment to appraise the value of the reorganization. Kendrick Kuo, Assistant Professor at the U.S. Naval War College, notes that military innovation often receives favorable publicity without rigorous evaluation of its efficacy.<sup>38</sup> Therefore, should observations indicate that the reorganization was unsuccessful, a full or partial reversion to extant structures is recommended.

## CONCLUSION

17. The CA is presently conducting a review of its tasks and organizational structure. This paper argues that the RCE are not presently organized in a way that best supports the CA. Corps leadership is heavily engaged primary roles and does not have command authority over engineer units. During combined arms training, engineer and CET engagement can be sub-optimal. The creation of a unified command structure, enabled by a headquarters would allow for long-term vision and capability management, retention of corporate knowledge, and hold engineer units accountable for the stewardship of the profession. With the appropriate command relationships, brigade groups would continue to be sufficiently enabled for operations.

## ANNEXES

Annex A – Current Royal Canadian Engineer Unit Disposition

Annex B – Recommended Organization of Royal Canadian Engineers

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<sup>38</sup> Kendrick Kuo, “Dangerous Changes: When Military Innovation Harms Combat Effectiveness,” *International Security* 47, no. 2 (October 1, 2022): 48–87, [https://doi.org/10.1162/isec\\_a\\_00446](https://doi.org/10.1162/isec_a_00446).

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## ANNEX A – Current Royal Canadian Engineer Unit Dispositions<sup>39</sup>

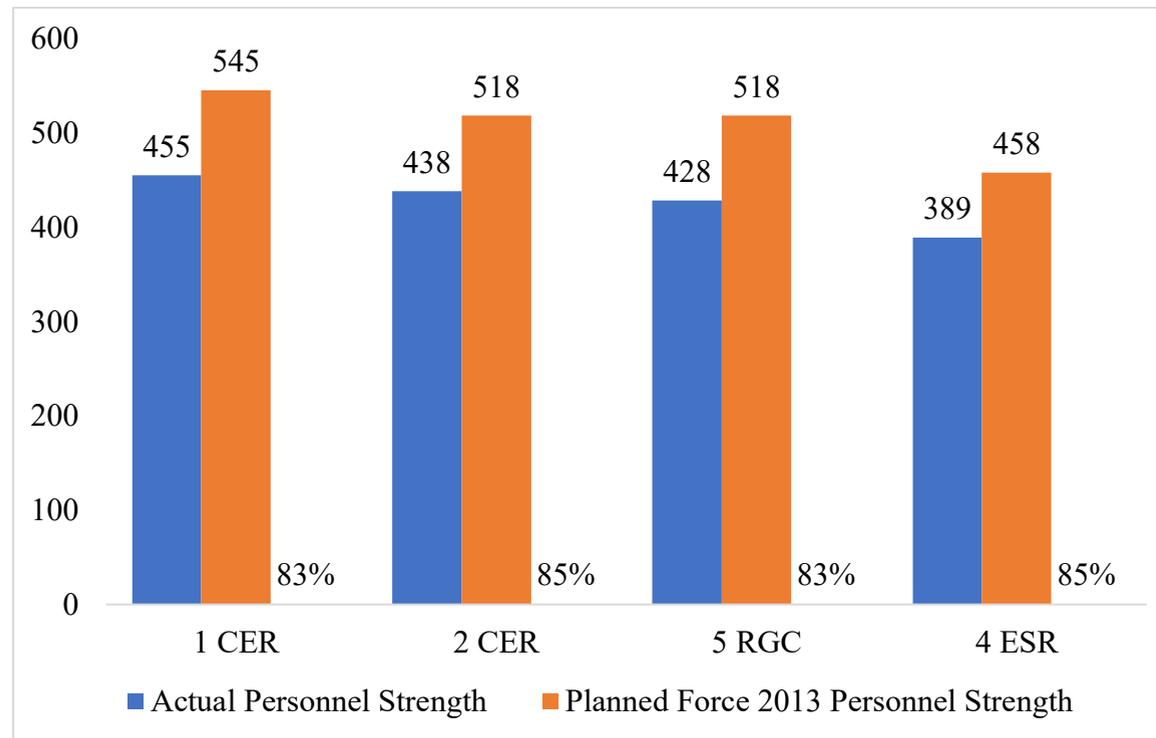
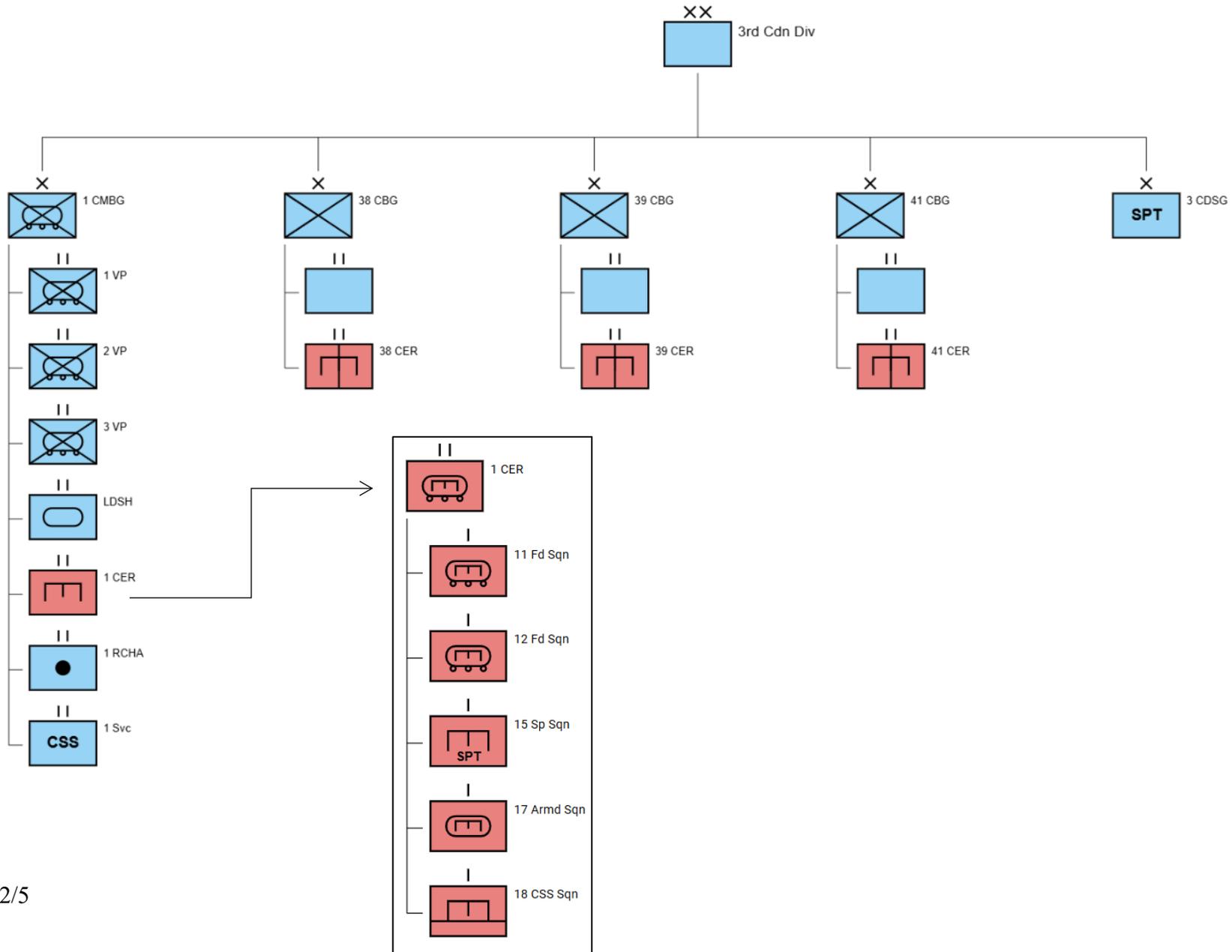
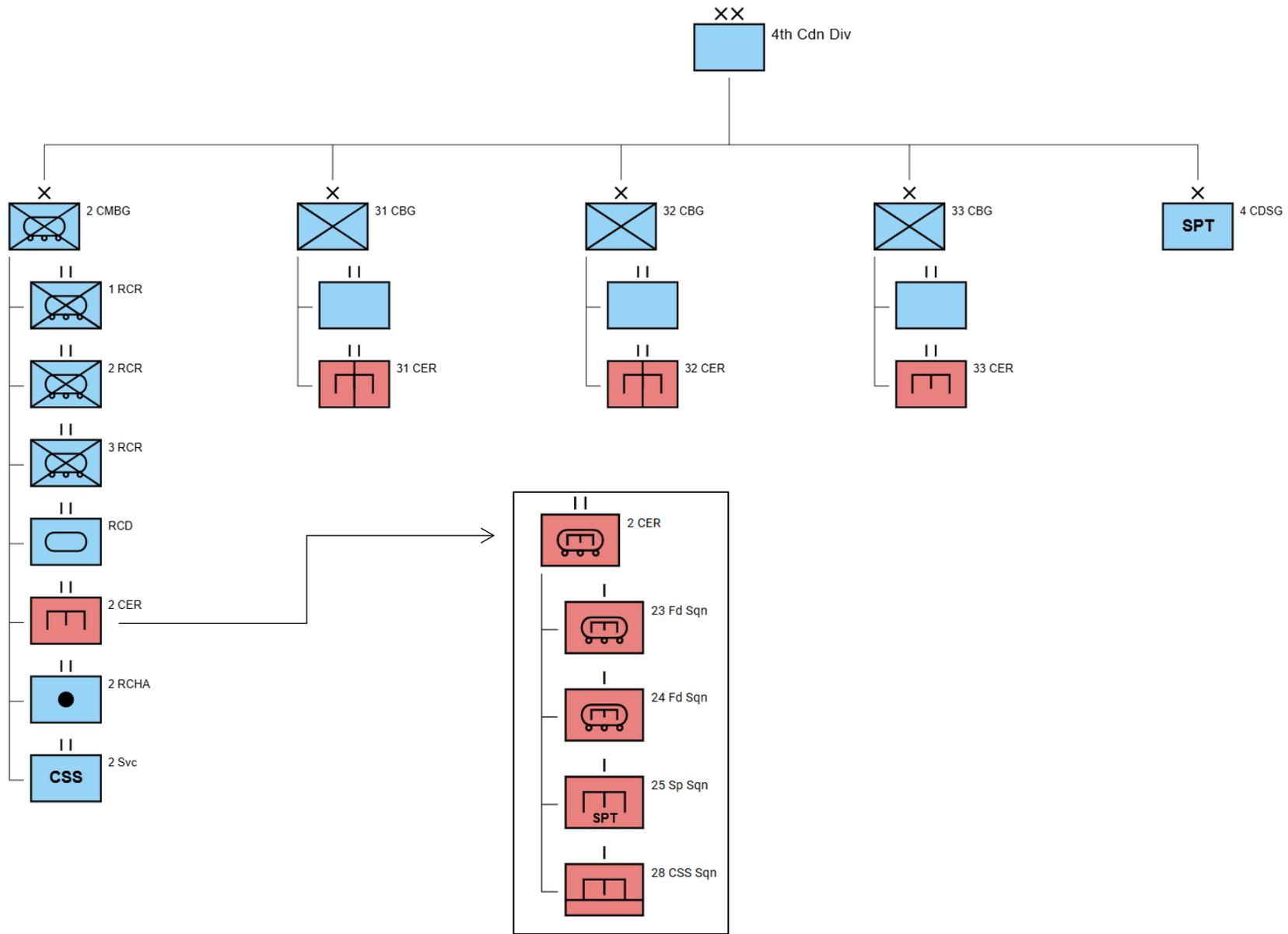


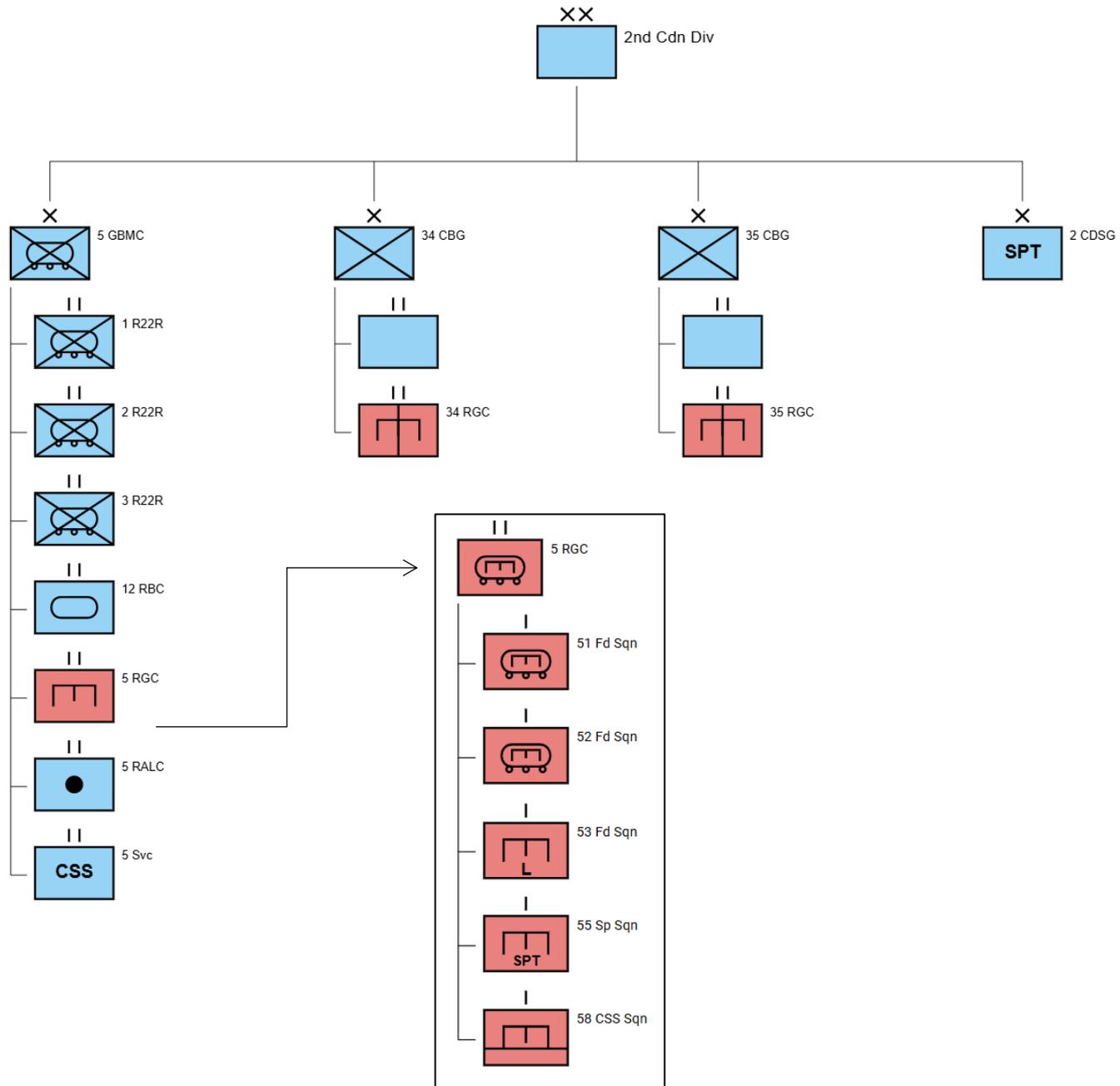
Figure 1. RegF CA Unit Strength<sup>40</sup>

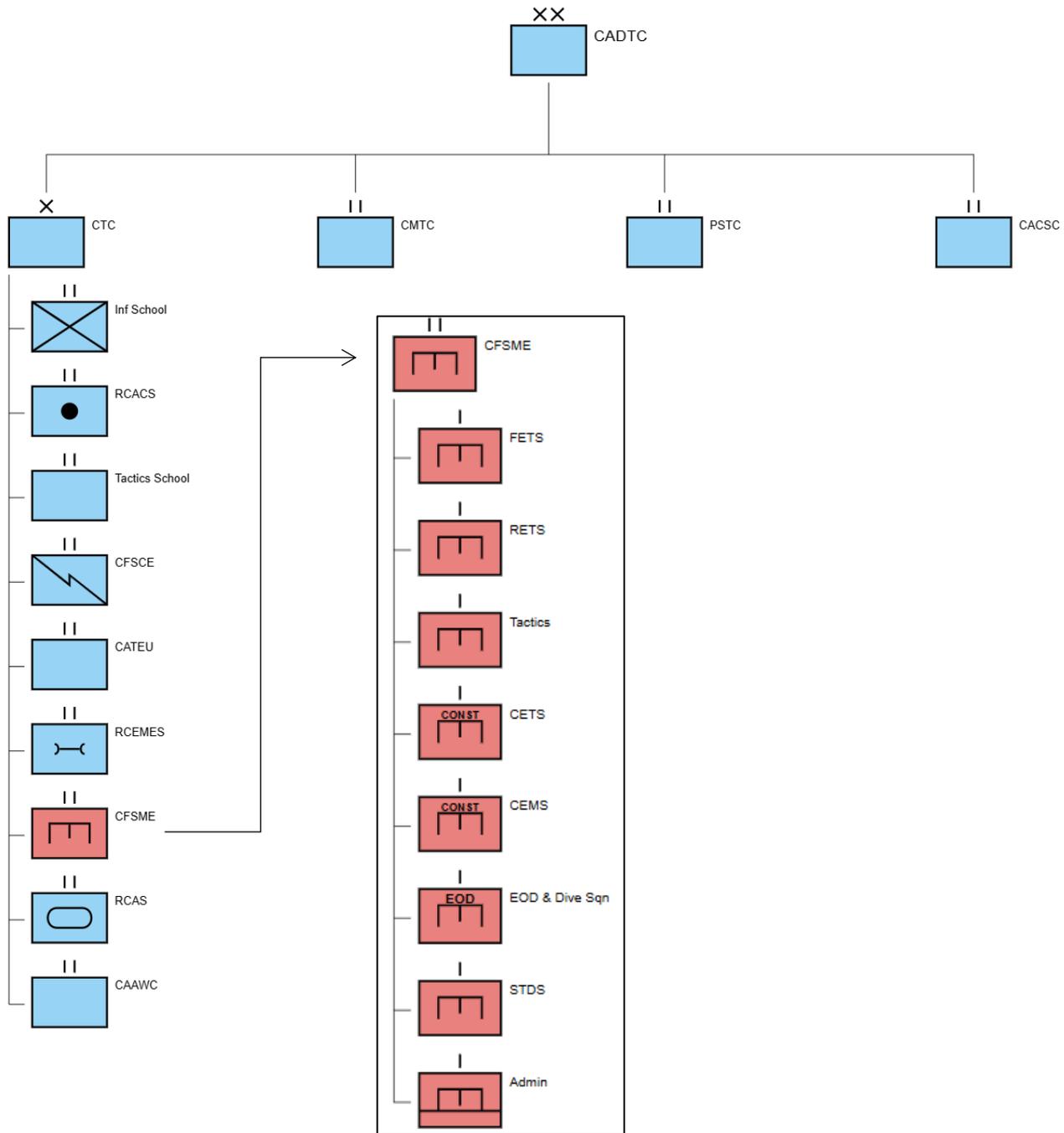
<sup>39</sup> Organizational charts created with the use of orbatgenerator.com

<sup>40</sup> Chart generated from MCS data and Canada, Department of Defence, "Force 2013 Master Implementation Directive - Annex F Engineer Branch Force Generation Requirements and HR Apportionment" (Ottawa: Canadian Army Headquarters, Directorate of Land Force Development, June 2011), F-3/3.

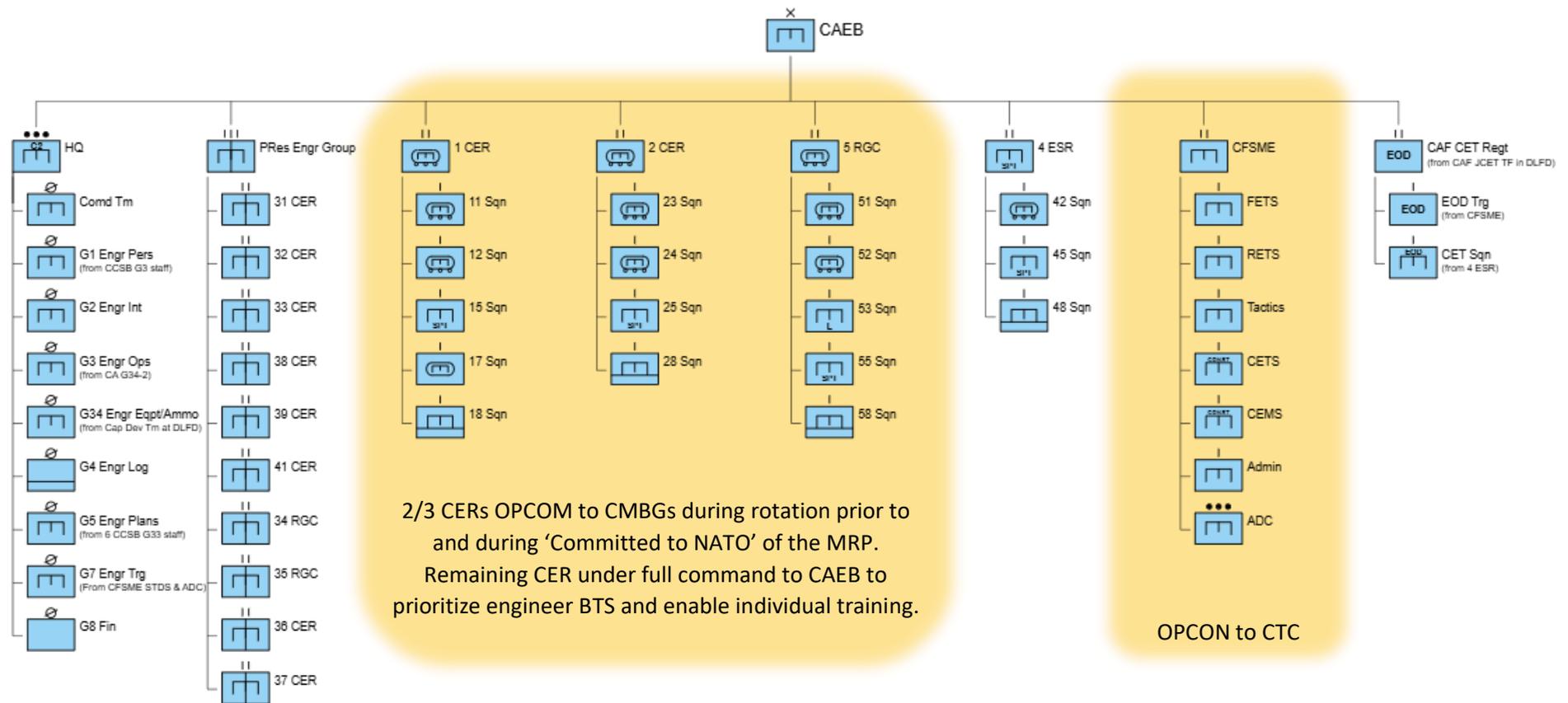








## ANNEX B – Recommended Organization of The Royal Canadian Engineers<sup>41</sup>



<sup>41</sup> Created with the use of orbatgenerator.com. MRP cycles obtained from Canada, Department of National Defence, "eMRP."