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Improving CAF Theatre Activation Timelines

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BEHIND THE SPEED OF RELEVANCE: IMPROVING CAF THEATRE ACTIVATION TIMELINES

AIM

1. This paper aims to identify the key doctrinal limitations and inefficiencies of the engineer component to theatre activation (TA) at the operational level and propose recommendations to CJOC Director General Support through the Joint Engineer. TA is composed of the planning, logistical and infrastructure construction activities that must occur prior to the projection of mission-specific forces.¹ A highly sequenced joint task, TA is a scalable enabling activity that must move “at the speed of relevance”² if it is to set the conditions for strategic success.³ Current CAF conventional force TA is not meeting the speed of relevance required for modern operations and must be addressed if the CAF is to present a viable nation power capability to the Government of Canada (GC).

INTRODUCTION

2. TA requires the planning and synchronized projection of engineer, communications, health services and logistical effects to set the conditions for the generation of strategic effects by deploying forces. It requires close coordination between diplomats, government departments, military planners, appointed commanders, host nation governments and private industries to correctly forecast and sequence the necessary results.⁴ Internally, the CAF accomplishes TA through three distinct units; the CJOC DG Sp staff who plan and coordinate joint operational level support, the Canadian Materiel Support Group’s (CMSG) who process and ship required military equipment, and the Joint Operational Support Group’s (JOSG) who identify personnel force generation (FG) and technical requirements, and execute the tactical level theatre opening.⁵ Driven by doctrine, technical standards and financial authorities, this support community works collaboratively to create the infrastructure and sustainment conditions required by deploying force commanders. Critical throughout the TA process is the rationalized FG and employment of CAF tradespersons and equipment in order to rapidly develop the minimum conditions required to project mission-specific effects.⁶ A lean TA process is not only vital in ensuring response speed but also in ensuring that the sustainment of the mission’s footprint remains feasible over time. At present, it takes an

¹ Department of National Defence, CFJP 4-0, *Support*, (Ottawa: Government of Canada, 6 October 2016), 6-1.

² Department of National Defence, *Joint Managed Readiness Program: The CAF Joint Training Plan (FY 21/22-FY 23/24)*, (Ottawa: Government of Canada, June 2021), 15.

³ *Ibid.* Theatre Activation is Joint Task 5.16; Department of National Defence, CFJP 4-0, . . . , 2-1.

⁴ Department of National Defence, CFJP 4-0, . . . , 1-2.

⁵ *Ibid.*, 2-11; Department of National Defence, B-GL-361-001/FP-001, *Land Force Engineer Operations – Volume 1*, (Ottawa: Government of Canada, April 1998), pg 299; Department of National Defence, *CJOC Direction on International Operations 10-6: Deployed Infrastructure*, (Ottawa: CJOC HQ, last accessed 21 December 2021), 8.

⁶ Department of National Defence, CFJP 3-12.2, *Force Beddown*, (Ottawa: Government of Canada, 2015), 1-1.

average of six months for the CAF to open a theatre for conventional forces.⁷ Simply put, this is not fast enough to meet the speed of relevance required by modern operations and GC expectations. Most worryingly, this six-month average represents the CAF's best effort while executing only half of the operational remits of the Strong Secure Engaged (SSE) defence policy.⁸

3. The culminating effort of the TA process is the resourcing and construction of camp infrastructure in preparation for occupation by mission forces.⁹ This activity represents the result of protracted joint planning, contracting, logistical sequencing, equipment transportation, and specialist FG and FE towards a single synchronized effect.¹⁰ Unfortunately, factors like the increasing technical complexity of CAF equipment, inflation relative to delegated financial authorities, increasing reliance on third-party contractors and suppliers, highly dispersed global operations, and an increasing expectation of personal amenities for deployed personnel are severely taxing the CAF support community's ability to TA at the speed of relevance.¹¹ While none of these factors rest solely within the purview of the CAF to address unilaterally, there are three areas where internal TA efficiencies can be realized within DND. These efficiencies exist in the areas of doctrinal camp construction standards, engineer tradesperson management for institutional vice operational tasks, and utilities equipment procurement. These three themes for CAF TA improvement are discussed in detail below.

DISCUSSION AND ANALYSIS

Inflexible and Dated Camp Design Standards

4. Operational TA planners employ doctrine and prescribed camp construction standards as the foundation for decision-making and resource allocation. They provide a clear standard of accommodation that deploying forces expect based on their mission duration. CAF doctrine provides a graduated four-tier system for camp construction and amenities design (Table 1).¹² These variable standards define the expected minimum and maximum allowable support criteria expected to achieve operational requirements.¹³

Standard	Mission Duration	Description
Tactical	Immediate / situational	A transient start-state for deploying forces. Units moving into a new theatre occupy hides or bivouacs using integral equipment, combat service support

⁷ Major Alain Ruel, *Briefing Note for Commander CJOC: Ways to Get Operating Faster – An Analysis of Deployed Infrastructure*, (Ottawa: CJOC HQ, November 2019), 1; Major Alain Ruel, *Briefing Note for CJOC JEngr Plans: Ways to Get Operating Faster 2.0*, (Ottawa: CJOC HQ, 6 December 2019), B-2; Department of National Defence, CFJP 4-0, . . . , 6-3.

⁸ Department of National Defence, *Strong Secure Engaged: Canada's National Defence Policy*, (Ottawa: Government of Canada, 2017), 81.

⁹ This terminal stage of TA is the tactical Theatre Opening performed by JOSG.

¹⁰ Department of National Defence, CFJP 4-0, . . . , 6-5.

¹¹ Major Alain Ruel, *Briefing Note for CJOC JEngr Plans*: . . . , 1-4, A-1, A-2.

¹² Department of National Defence, CFJP 3-12.2, . . . , 1-2.

¹³ *Ibid*, 1-1 to 1-2.

		(CSS) and close support engineers. ¹⁴ Provides for quick, but holistically inefficient operation over protracted periods of time.
Initial	Less than 6 months	Austere facilities that require minimal engineer services and logistical preparation prior to occupation by a force meeting limited objectives. ¹⁵ Typically achieved with modular tentage or HQSS, limited camp utilities and focused logistical support. ¹⁶
Temporary	6 to 24 months	Robust semi-permanent facilities that provide for sustained operations. ¹⁷ Full range of utilities and logistical services provided in support of persistent and varied operational effects. Typically achieved using CJOC's Relocatable Temporary Camp (RTC) assets. Often includes a Canada House and large gym facilities. Requires significant joint logistical and General Support engineering resources to achieve, ¹⁸ and is an enduring pan-CAF effort to maintain.
Permanent	Greater than 24 months	Enduring infrastructure purpose-built in accordance with Canadian building codes for variable mission commitments expected to last for a significant time. ¹⁹ Ex; Op REASSURANCE Multi-National HQ.

Table 1: Camp Construction Standards

5. Simplistic and lean, TA using Tactical and Initial standard camps is often rapidly achievable using the resources and personnel available within a single Service. However, missions forecast over six months progress innocuously to Temporary standard camps and suddenly meet a significant escalation in joint planning, equipment and resource commitments. Therefore, while camp design is supposed to be flexible and scalable, the opportunity to select between only four standards, which heavily favour the selection of Temporary standard, offers planners limited defence from the expanding appetites of deploying forces. At its heart, the predominant issue with Temporary standard camps is that they are expansive and demand RTC equipment. RTC TA is notoriously time and labour intensive to prepare, transport, establish and maintain. Worse, the current expeditionary trend is that Temporary standard camps remain at this inefficient and costly

¹⁴ *Ibid*, 1-2.

¹⁵ Department of National Defence, CFJP 3-12.2, . . . , 1-2; Department of National Defence, B-GG-005-004/AF-015, *Military Engineer Support to Canadian Forces Operations*, (Ottawa: Government of Canada, 6 June 1999), 6A-1.

¹⁶ Major Alain Ruel, *Briefing Note for Commander CJOC*: . . . , 1.

¹⁷ Department of National Defence, CFJP 3-12.2, . . . , 1-2; Department of National Defence, B-GG-005-004/AF-015, . . . , 6A-1.

¹⁸ Department of National Defence, CFJP 4-0, . . . , 2-6.

¹⁹ Department of National Defence, CFJP 3-12.2, . . . , 1-3.

standard for over two years, often for the duration of the mission.²⁰ Therefore, ill-conceived standards force the adoption of costly RTC operations that the support community cannot readily afford.²¹ Consequently, the CAF becomes constrained through a self-inflicted doctrinal restriction, which defaults to the creation and maintenance of Temporary camps that the force cannot reasonably produce or sustain.

Tradesperson Availability

6. As of August 2021, the CAF's combined Construction Engineer (CE) trades and CE Superintendent Warrant Officer occupations are 31% below their Preferred Manning Levels (PML), representing a deficiency of 242 personnel.²² This deficiency in deployable technicians directly constrains the occasion and speed with which the CAF can execute TA, and is the result of three aggravating factors:

- a. Since 2016, the majority of engineer tradespersons are employed providing institutional infrastructure support to domestic bases and wings under ADM(IE) Real Property Operations Group.²³ However, CAF institutional elements are not readily available or principally considered for FG on operations. Additionally, CANSOF further diminishes this pool of immediately available engineer tradespersons for TA by their own FG and FE cycles.²⁴
- b. The technical accreditation, apprentice supervision, and safety responsibilities required of trade supervisors demand the deployment of numerous CE MCpls and Sgts for expeditionary operations. This demand leads to a high deployment rate for CE NCOs, causing increasing stress and personnel shortages in already deficient trades.²⁵ This pressure is further exacerbated by the acute need for instructors by CE training institutions, creating further rank-specific pressures and increasing the requirement for exclusionary decisions between institutional and operational support decisions.
- c. The current inclination to stagnate deployed camps at the Temporary standard has significant consequences for CE trades. Already ageing and inefficient RTC equipment is often employed well past its intended two-year cycle, directly increasing the number of technicians and maintenance hours required to sustain camp operations. This issue is also reflected in

²⁰ Both Operation IMPACT (initiated October 2014) and Operation REASSURANCE (initiated June 2017) continue to rely heavily on RTC equipment and engineer tradespersons to maintain camp services despite enduring well beyond the 24 months. As of June 2021 there was no indication that there was a concerted effort to comprehensively evolve camp infrastructure to the Permanent Standard.

²¹ Department of National Defence, CFJP 3-12.2, . . . , 1-2.

²² Lieutenant-Colonel Nathan Packer, CJOC JEngr Ops and Plans, email correspondence with author on 10 January 2021.

²³ *Ibid.*

²⁴ *Ibid.* This is not to suggest that ADM(IE) should not manage CAF tradespersons, only that they must be more readily accessible for the military's primary function of expeditionary operations.

²⁵ *Ibid.*

the increasing frequency of Technical Assistance Visits (TAV) surged to assist theatres.

7. This cumulative result of these pressures is that only approximately 5% of most CE trades are fit and available for deployment at any time.²⁶ Subsequently, CJOC has declared CE Superintendents and electrical trades as “hard to generate” in an effort to rationalize a diminishing operational capability between theatres.²⁷ Similarly, in June 2021, CJOC JEngr identifies to DG Sp that a lack of CE tradespersons is one of the single most significant impediments to meeting SSE.²⁸

8. An option to offset this expeditionary deficiency is the Canadian Forces Contractor Augmentation Program (CANCAP), a standing offer for contracted construction and maintenance services for deployed infrastructure.²⁹ CANCAP is essentially a contractual mechanism allowing Canadian private contractors to be employed in support of expeditionary operations. However, this alternative to CAF integral support comes at a very high financial cost.³⁰ Additionally, while potentially suitable for established operations, the timeframe required to realize a fully CANCAP TA solution takes longer than that currently achievable by the CAF internally.³¹ Another alternative is Defence Construction Canada (DCC), a crown corporation specializing in the provision of institutional construction and infrastructure services to the CAF.³² However, with a 12% commission cost, reduced procedural flexibility, and contractual timelines similar to those of the CAF, DCC also does not offer a holistic solution to TA.³³ One of the crucial constraints to TA is the lack of regional knowledge and experience, an obstacle that both uniformed and non-uniformed personnel equally face.³⁴ In effect, it becomes clear that Crown Corporation and private industry cannot replicate CAF TA capabilities at the required speed of relevance. As such, the CAF must look to find internal efficiencies between operational and institutional employment of tradespersons and seek to integrate third-party effects in ways that best complement broader strategic effects.

²⁶ Authors anecdotal experience in January 2020 as a CJOC Joint Engineer Desk Officer.

²⁷ Major-General I.S. Huddleston, RDIMS #530647, *Prioritizing Hard to Generate Deployed Operations Positions*, (Ottawa: CJOC HQ, July 2021), A-1..

²⁸ Authors anecdotal experience in June 2021 as a CJOC Joint Engineer Desk Officer.

²⁹ Major Alain Ruel, *Briefing Note for CJOC JEngr Plans: . . .*, 3; Department of National Defence, *CJOC Direction on International Operations 10-12: Engineer Contracting and Finance*, (Ottawa: CJOC HQ, last accessed 21 December 2021), 2.

³⁰ Chief Review Services, *Evaluation of the Canadian Forces Contractor Augmentation Program (CANCAP)*, (Ottawa: Government of Canada, June 2006), A-1. Departmental expenditure requirements had to be more than doubled from \$200 million to \$500 million from 2002 to 2007.

³¹ Major Alain Ruel, *Briefing Note for Commander CJOC: . . .*, 1. The small Camp Érablé footprint, established within the confines of an existing US camp and leveraging ACSA, took 4 months for the CAF to establish, whereas the CANCAP solution was assessed as requiring six months.

³² Department of National Defence, *CJOC Direction on International Operations 10-12: . . .*, 3.

³³ Major Alain Ruel, *Briefing Note for CJOC JEngr Plans: . . .*, 4.

³⁴ *Ibid*, 4.

Replacement of Temporary Standard Camp Equipment

9. In 2017, Comd CJOC directed that by 2030 deployed camps must reduce their petroleum-generated energy consumption by 50%.³⁵ This reduction would achieve the tactical effect of reducing the logistical demands of deployed forces, the operational effect of streamlining TA and camp maintenance resource demands, and the strategic effect of greening DND in line with GC direction.³⁶ However, these highly desirable effects are far beyond the capabilities of operational staff and theatre-level commanders to achieve independently given the CAF's dependence on ageing RTC electrical generation (EG) and distribution (ED) equipment. RTC is 20 years old and demands increasing preventative maintenance and emergency repair to remain serviceable. This requirement, in turn, demands an increasing level of regular attention from a larger number of deployed technicians and increasingly frequent TAVs. As such, the planning factor for EG equipment in theatre is often a staggering 3-to-1 ratio to ensure uninterrupted operation.³⁷ Further, while NATO doctrine prescribes the use of 125 personnel modular camp building blocks, CAF RTC efficiencies are found in 250 personnel blocks, inhibiting the modular efficiencies and operational flexibility that can be readily achieved.³⁸ Thus, while CJOC has implemented deployed energy monitoring programs through JOSG, and reduced the exceedingly generous planning allocations for power generation per person by 50%, RTC is ill-suited to deliver on these improvements.³⁹ Inflexible design scaling options, increasing technician maintenance demands, and a requirement to deploy greater quantities of equipment to ensure camp operation directly dictates the speed and efficiency at which the CAF can achieve and sustain TA.

10. The RTC suite will be replaced in 2030 through the Camp Sustain (CS) project.⁴⁰ Breaking from traditional and inhibitive block-based camp design models, CS proposes that future investment focus on the provision of technologically advanced and highly variable utilities equipment systems that can be efficiently tailored to the specific minimum mission requirements.⁴¹ More importantly, Defence Land Requirements 7 (DLR-7) are exploring more innovative means of cyclical equipment procurement that

³⁵ Lieutenant-General S.J. Bowes, RDMIS #441816, *CJOC Implementation Plan – Integrated Camp Utility Technologies (ICUT) Evolution of Integrated Camp Energy Technologies (ICE-T)*, (Ottawa: CJOC HQ, 21 December 2017), 1.

³⁶ Lieutenant-General S.J. Bowes, 2; Treasury Board Secretariat, *Greening Government Strategy: A Government of Canada Directive*, (Ottawa: Government of Canada, 24 February 2021).

³⁷ Author's anecdotal experience in September 2020 while at CJOC concerning power generation for Ali Al-Salem Air Base, Kuwait, Operation IMPACT.

³⁸ North American Treaty Organization, NATO Standard ATP-3.12.1.4, *Deployed Force Infrastructure*, (Belgium: SHAPE HQ, August 2018), 3-2.

³⁹ Lieutenant-General S.J. Bowes, 3, A-1 to A-2. Planning figure reduced from 3kW per person to 1.5kW.

⁴⁰ Department of National Defence, *Strategic Context Document Camp Sustain (CS) C.000760*, (Ottawa: Department of National Defence, March 2019), 23; Lieutenant-Colonel Ryan Adams, *Camp Sustain Project (CS) C.000760*, (presentation to Senior Review Board, Ottawa, ON, 24 September 2021), with permission.

⁴¹ Department of National Defence, *Strategic Context Document Camp Sustain . . .*, 36 – 37. The CS project proposes the adoption of electrical micro-grid technology where batteries that store generated excess power and distribute it on demand. This is contrast to the current system where generated excess power is sent to high resistance load banks.

would keep CAF utilities equipment abreast with technological changes and industry standards, vice remaining static for 30-year increments.⁴² Currently being solicited for industry interest and engagement, the CS project looks holistically at the various standards of CAF infrastructure available and seeks to focus spending on utilities services as a key force enabler. This focused spending on utilities equipment would directly improve the modularity and flexibility afforded to TA practitioners and the wider CAF.

CONCLUSION

11. TA is an intricate balance of joint and whole-of-government activities that must be achieved at the speed of relevance demanded by circumstance and political necessity. Accordingly, the CAF must possess a balanced set of skills, equipment capabilities and scalable doctrinal models if all parts are to work harmoniously to efficiently achieve mission effects. Unfortunately, ageing equipment, competing institutional requirements on already constrained technical trades, and construction standards that compel planners into inefficient designs all negatively impact the speed at which the CAF can accomplish TA. Further, the costly delegation of expeditionary TA to crown corporations or private industry through CANCAP fails to improve timeframes because these tools do not enhance regional knowledge or speed of response beyond present CAF limitations.

12. Despite these complexities and limitations inhibiting efficient TA, there are actions that the CAF can take which have the potential to significantly improve the speed and efficiency at which camp construction, and therefore the overall TA process, can be achieved. These recommendations demand change to doctrinal camp construction standards, engineer tradesperson management for institutional vice operational tasks, and focused investment in utilities equipment. Implementation of these recommendations, entirely or in part, will enhance the speed at which holistic CAF TA efforts can be achieved.

RECOMMENDATIONS

13. Recommendation 1: Increased Flexibility in Camp Construction Standards. Implement changes to CFJP 3-12.2 as per Table 2 below to enhance planner flexibility, resource efficiency, and reduce operational CE tradesperson requirements. Concurrently, include Table 2 in CDIO 10-6 as the new standard for deployed operations.

Standard	Mission Duration	Description
Tactical	Immediate / situational	No change.
Initial	Less than 6 months	No change.
Improved	6 to 24 months	Initial Standard augmented with limited EG, sanitary and messing services from CJOC RTC for core camp functions. Gym-in-a-box deployed.

⁴² Lieutenant-Colonel Ryan Adams.

Enhanced	2 to 4 years	RTC used for camp construction, less accommodations which should be achieved via HQSS. RTC shelter provided for amenities and storage requirements. No Canada House authorized.
Enduring	4 to 6 years	Robust semi-permanent facilities that provide for sustained operations with the full range of utilities and logistical services provided through RTC assets. Gym, Canada House and other amenities authorized.
Permanent	6 years or more	No change.

Table 2: Enhanced Camp Construction Standards

14. Recommendation 2: Contract Institutional Trade Support. The contracting of expeditionary TA is not efficient, but CANCAP could be altered to greater effect. Instead of paying significant sums to turn contractors into deployable personnel, CJOC could fund the replacement of military tradespersons on bases and wings by civilian contractors. This tool would be more cost-effective and use available national human resources to augment existing CAF capabilities more efficiently. A similar mechanism should be considered for training institutions like the Canadian Forces School of Military Engineers to augment limited instructor availability and reliably increase trade health. While this financial arrangement would require an amendment to the financial authorities and rules governing CJOC's use of operational funds, it is likely the most readily available means of addressing the CAF's operational limitations. The rationale that the CAF is hard-pressed to meet the technical support requirements of only half of the SSE, and the declaration of specific trades as hard to generate lends credibility to this requirement.

15. Recommendation 3: Improving Camp Utilities Equipment. Work with DLR-7 to support the realization of Option 3 of the CS Strategic Context Document.⁴³ The CS project must remain focused on providing modern and highly modularized utility services for deployed camps and not simply replace the flawed RTC capability concepts that have proven inflexible to CAF TA needs. Operating efficiencies found through micro-grids and smaller modularization of equipment are necessary, as these will enable planners to tailor camp design closer to minimum operating efficiencies, decrease resource and personnel requirements, green operations, and enable more rapid TA. Equipment, rather than being seen simply as a means of realizing TA, must be recognized for its broader institutional and operational second-order effects if TA timeframes are to be improved.

⁴³ Department of National Defence, *Strategic Context Document Camp Sustain . . .*, 34 – 36.

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