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## OPTIMIZING OPERATIONAL SUPPORT IN THE CANADIAN ARMED FORCES

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### JCSP 45

#### Master of Defence Studies

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**Lieutenant-Colonel Lydia Évéquoz**

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## **ABSTRACT**

The Canadian Armed Forces' presence in the world is in growing demand. To meet the Canadian Government's foreign and defence policy objectives, the CAF must conduct dispersed operations that require a complex system of support to enable it. The current model of operational support has been developed to meet this demand but is often stretched thin due to limited resources and constraints imposed on the organization. This study examined the parallels between operational support models from both industry practices and international partners and offers insights on how Canada can become more efficient in its support model.

On one hand, the United States, the United Kingdom, and Australia are all taking drastic measures to adapt their concept of support to the new operating environment the world is facing. On the other hand, and due to the competitiveness in this market, industry is also becoming leaner in their operations, balancing risks and leveraging partnerships to strengthen their operations. ATCO Frontec, a company focused on operations support and services, hosted a four-week internship for the author which offered a glimpse into areas where the Canadian Armed Forces can improve going forward. As this study highlights, the structure surrounding resource management and decision-making, "phase zero" activities, and contracted support are three critical areas where the Canadian Armed Forces can gain the greatest advantage in streamlining its operational support. These opportunities, however, come at a cost in terms of readiness structure, risk acceptance and whole-of-government implications in the delivery of support.

## **ACKNOWLEDGEMENTS**

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## **TAKING CARE OF BUSINESS: OPTIMIZING OPERATIONAL SUPPORT IN THE CANADIAN ARMED FORCES**

*Logistics considerations belong not only in the highest echelons of military planning during the process of preparation for war and for specific wartime operations but may well become the controlling element with relation to timing and successful operation.*

- Vice Admiral Oscar C. Badger, *United States Navy*<sup>1</sup>

### **INTRODUCTION**

The Canadian Armed Forces (CAF) has been conducting operations across the world since its formation in 1968. Although the appetite of governments to deploy military forces has varied over time, one thing remains constant: over the last sixty years the vast majority of CAF deployments have relied heavily on a significant deployment of resources in order to enable the desired effects on the ground. This reliance on deployed resources is not likely to change in the future given Canada's political appetite to contribute to peace and security worldwide and reinforce ties with international Organizations such as the United Nations (UN) and the North Atlantic Treaty Organization (NATO) as well as many key allies. Canada's current Defence Policy, *Strong, Secured, Engaged*, is a demonstration of the current government's ambitions. The Canadian government will continue to rely on its armed forces to deliver humanitarian assistance, to respond to crises worldwide and to contribute to its overall foreign policy objectives. The CAF can provide an organized, expedient, and self-sufficient presence.

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<sup>1</sup> Vice Admiral Oscar Charles Badger. *The Principles of Command and Logistics*. A Lecture delivered at the Naval War College on 10 October 1951. Published under the Naval War College Information Service for Officers, Vol. 4, No. 4, 23.

By using the CAF in this manner, as one tool in the “whole of government” toolbox, in support of diplomatic approaches, the Government of Canada makes a strong political statement. This ambition by the government is limited only by the CAF's ability to generate sufficient force; however, the projection and sustainment of its forces abroad often becomes an afterthought, notwithstanding its criticality to success.

It is realistic to consider operational support as a critical and limiting factor in the CAF ability to meet government objectives given its limited resources, and as such, it is in the CAF's interest to maximize the effectiveness of its operational support. Operational support, as defined in the Canadian Forces Joint Publication (CFJP) 4-0, is the specialized and common support activities provided to aid or sustain the operations of a force within a theatre of operations and along the strategic lines of communication.<sup>2</sup> Operational support allows individual task forces to rely on a joint support structure, referred to as the Joint Task Force Support Commands [(JTFSC) in Canadian doctrine] for the provision of joint, strategic or specialized activities such as extra-theatre movements, opening and closing of theatres, medical, engineering, policing, communication and personnel support.<sup>3</sup> For the purpose of this research project, the concept of operational support will focus on the ability for the CAF to project and sustain infrastructure and resources to enable operations, thus focusing principally on the management of assets and personnel projection. Although the CAF often operates as a self-sufficient entity, it would be myopic, however, to believe that operational support is solely a military function.

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<sup>2</sup> Department of National Defence. B-GL-005-400/FP001. *Canadian Forces Joint Publication (CFJP) 4.0 Support*. 1<sup>st</sup> Edition, Ottawa: DND Canada, 2012, G-L 7.

<sup>3</sup> Department of National Defence. *CFJP 4.0 Support*, G-L 7.

The CAF has and will continue on specific occasions, to make use of contracted resources to support their operations. Whether it be due to the burden of the support on personnel or CAF material resources, many companies are capable of offering such services. Furthermore, many other industries rely on such services regularly. Mining and oil and gas companies for example, who, just like the CAF, operate in austere locations are a primary customer for turn-key operational service support. Although many companies also operate an integrated support system, there is a growing demand for a turn-key solution to allow those companies to remain focused on their core business. Operational support expertise in the private sector is growing steadily and is becoming more and more competitive. The private sector often develops and masters the art and science of large-scale logistics and sustainment in order to remain competitive and gain a leading edge. The private industry continues to dominate the development and innovation with regard to logistics.<sup>4</sup>

Although some of the priorities of the private sector differ from the public sector, those priorities are often more aligned than divergent, and that there would be significant benefits for the CAF to mirror practices from such companies in order to streamline and make CAF sustainment more efficient. As this study will demonstrate, the CAF's operational support concept can be optimized by placing more emphasis on the holistic management of all resources assigned to support and developing a more rigid foundation of logistical framework early on, one based on partnerships and reliance on non-military assets.

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<sup>4</sup> Stephen M. Rutner, Maria Aviles, and Scott Cox. *Logistics evolution: a comparison of military and commercial logistics thought*. Georgia Southern University, The International Journal of Logistics Management, Vol 23, No 1, 2012, 102.



To do so, this paper will provide an understanding of the current sustainment model of the CAF including its structure, resources and responsiveness and will draw comparisons with the model used by industry, more specifically ATCO Frontec who supported a four-week internship at their head office in Calgary. Moreover, it will assess the models of Canada's closest allies, demonstrating the application of the recommendations by other militaries.

In order to identify lessons from the industry, it is critical to understand the context in which the CAF is operating. In addition to this introductory chapter, this essay consists of five main chapters and a concluding chapter. Chapter One will cover the strategic and political nexus of the CAF's projection of forces in the world. It will identify the primary diplomatic, economic and military pressures that influence the provision of operational support. Chapter Two will review the historical approach of the CAF since World War II, identifying trends and operating environment realities that shaped passed decisions. Chapter Three will focus on understanding Canada's model of operational support, its structure, assigned resources and development. This chapter will also identify where Canada's key challenges are by reviewing lessons from recent experience and deployments. Chapter Four will review the various support concept used by our key allies, notably the United States (US) (Marine Corps, Navy, Air Force, Army and joint doctrine), the United Kingdom (UK), and Australia. Comparing the various approaches and motivations behind their doctrinal approach which can help inform Canada's approach and reasoning. Chapter Five will provide a deep understanding of ATCO Frontec's model of operations, decision-making process and success criteria. It will provide insights into the company's way of doing business, from strategic planning to

delivery and customer service. Chapter Six, will draw a parallel between Canada's allies and ATCO Frontec's operations and the CAF model and highlight best practices and lessons that could practically be implemented in the CAF concept of support. Finally, a concluding chapter will summarize the findings and recommendations as well as highlight further research that is required on this topic.

## **Literature Review**

The literature covering the subject of operational support is primarily found in the various nations' doctrines, official guidance documents and academic (scientific and business) research. The intelligence sharing alliance of the US, Canada, Australia, the UK and New-Zealand, known as the Five Eyes, is composed of like-minded, anglophone nations with close security and military ties to one another. Each nation has a relatively well-defined doctrine which, unsurprisingly, resembles the NATO Doctrine. These doctrines have been reasonably well maintained and kept up to date, with updated versions published between 2010 and 2018 for most publications. Canada's joint publication on operational support (CFJP 4.0) was first released in 2014, with a second review currently on-going. At the time of its release, the Commander of Canada's Joint Operations Command (CJOC) noted that the concept of support for domestic and continental operation was not well covered in this edition. This first edition focused principally on operations abroad.

Internationally, the US, especially the US Marine Corps, have been putting considerable effort in understanding the new realities of the operating environment and are working on redesigning their concept of support, focusing principally on becoming more agile and flexible. The Australian Defense Forces have also been making significant

revisions to their doctrine recently. The level of research and details in the Australian Defense Doctrine Publication 4.0 and subsequent series of publications related to logistics clearly demonstrates their appreciation for the importance of operational support in their ability to conduct operations. They have also developed reliable strategic guidance on this subject, intending to ensure relevance and enhancing collaboration between government, agencies and the private sector.<sup>5</sup>

Canada has leaned forward on the scientific front to scientifically quantify the adequate framework to support CAF operations. Most of this research has been conducted by the Defence Research and Development Canada (DRDC) organization, on behalf of the Canada Operational Support Command, now a part of Canada Joint Operational Command. This research took place from 2007 to 2013 and was led by Mr. Ahmed Ghanmi, a research scientist then based at the Centre for Operational Research and Analysis in Ottawa. Since then, there has not been further scientific research done by DRDC; however, mission lessons continue to be drawn in order to improve CAF doctrine internally, especially by the CJOC J7 doctrine and training section.

Academically, various business management departments of Canadian universities continue to work on the optimization of the supply chain and resources handling. The University of Waterloo, for example, is working on the integration of robotics in supply chains, hub network design, supply chain and reverse logistics network design, and hazardous materials logistics.<sup>6</sup> Similarly, the University of Windsor has established a centre of excellence and research on this topic. Their *Supply Chain Management and*

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<sup>5</sup> Vice Chief of the Defence Force. *Future Logistics Concept 2035*. 2012, 2.

<sup>6</sup> University of Waterloo. *Supply Chain and Logistics Research*. Last accessed 8 April 2019. <https://uwaterloo.ca/supply-chain-logistics-research/researchers-and-areas-expertise>

*Logistics Optimization Research Centre* is focused optimizing supply chain management, logistics, and business intelligence.<sup>7</sup> Those universities are a great demonstration of the appetite for such research, one that is very focused on optimizing operations for economic and competitiveness reasons, a need that is driven principally by industry.

As this brief literature review highlights, none of this literature specifically targeted the comparative functions of industry and CAF's in terms of operational support needs and concepts. This research paper will attempt to bridge that gap and identify key areas where the CAF can adopt practices from the industry that would benefit their operational support. Practical research, in the form of a four-week internship in industry, will form the basis for this paper's analysis of industry processes and organizational structures.

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<sup>7</sup> University of Windsor. *Supply Chain Management and Logistics Optimization Research Centre*. Last modified 03 July 2018, last accessed 8 April 2019. <http://www.uwindsor.ca/scm/>

## CHAPTER 1 – STRATEGIC PERSPECTIVE

Strategic guidance and objectives have a direct impact on how the CAF can plan and execute operational support. To optimize the CAF's model of operational support, it is critical to gain an understanding of the pressures and overarching objectives that Canada is seeking when deploying CAF personnel throughout the world. These objectives are embedded in Canada's defence policy and are in line with broader foreign policy objectives. Any optimization of the CAF's approach must meet and support those objectives.

### **Canada's Foreign Policy Objectives**

Canada's foreign policy is quite general in nature and aims to support economic, diplomatic, social and humanitarian objectives. On behalf of the Government, Global Affairs Canada manages "Canada's foreign affairs and diplomatic relations, consular services, international trade, and international development."<sup>8</sup> As such, this department plays a highly influential role in shaping the CAF's operations abroad as the CAF becomes a tool to achieve their objectives.

The role of the CAF in supporting international development and foreign affairs is relatively well understood. Whether it be assisting during a humanitarian crisis or participating in a peace-building or stability operation, the CAF's role is evident and significant. The participation in coalitions and alliances supports diplomatic ties with partner nations, maintaining Canada's contribution to world security. However, unlike countries with colonial ties around the globe, Canada's bilateral relations with various

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<sup>8</sup> Canada. *Global Affairs Canada*. Last modified 8 May 2019, last accessed 9 May 2019. <https://www.international.gc.ca/gac-amc/index.aspx?lang=eng>

nations is entirely reliant on Canada's diplomatic prowess. The close ties between diplomatic, economic and military activities were never more noticeable than in the fall of 2010 when the United Arab Emirates expelled the CAF on very short notice following a commercial dispute over Canadian landing rights for airlines from the Gulf region.<sup>9</sup> Although the overall objectives of Canada's foreign policy have been relatively consistent over time, the priority assigned to each aspect varies based on current government priorities and global dynamics.<sup>10</sup> This was demonstrated over the last decade which saw transitions between conservatives and liberal governments, and where a significant shift occurred from an economy-driven foreign policy prior to 2015 to a development and diplomacy-focused policy in the following years.<sup>11</sup> In her 2017 speech to the House of Commons, the Minister of Global Affairs, Minister Freeland clearly stated the current objectives of the government abroad, one that sees the military play a supporting role in support of international partnerships and diplomatic efforts to uphold international rule of law and human rights for all.<sup>12</sup> These objectives are further described in Canada's most recent defence policy, the conduit through which the broad strategic foreign policy objectives are translated as tasks for the CAF. The policy highlights the security and prosperity of Canadians as the government top strategic interest. Their strategy rests on three pillars: global stability, the primacy of the rules-based international order, and the

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<sup>9</sup> Daniel Leblanc. and Jane Taber. *UAE banishes Canada from base, blocks Mackay from its airspace*. The Globe and Mail, last modified 2 May 2018, last accessed 9 May 2019.

<sup>10</sup> Stephen Brown. *All about that base? Branding and the domestic politics of Canadian foreign aid*. Canadian Foreign Policy Journal, Vol. 24, No. 2, 2018, 146.

<sup>11</sup> Asa McKercher and Leah Sarson. *Dollar and Sense? The Harper government economic diplomacy, and Canadian foreign policy*. International Journal, Vol. 7 (3), 2016, 360.

<sup>12</sup> Christie Freeland. Global Affairs Canada. *Address by Minister Freeland on Canada's foreign policy priorities*. Speech to House of Commons, Ottawa, 6 June 2017.

principle of collective defence. It also notes that Canada should exert a positive influence on the international stage.<sup>13</sup>

## **Defence Policy**

Canada's defence policy – the CAF's strategic direction – also offers distinct lines of effort that will impact the CAF's ability to provide operational support. Published in 2017, *Strong, Secured, Engaged* is a very detailed document providing the CAF and DND with particular priorities and expectations. The defence policy requires the CAF to be prepared to support up to nine lines of operations simultaneously in addition to its responsibilities at home (NORAD, aid to civilian authorities). It includes the support of two large, sustained deployments and two sustained smaller deployments.<sup>14</sup> Additionally, it asks for one large and two small short-duration (up to nine months each) deployments and one Disaster Assistance Response Team and non-combatant evacuation operation team, both of which require a very robust and timely level of support based on the urgency of the situation.<sup>15</sup> The concurrency of those lines of operations are challenging in terms of operational support. The activation and deactivation of a new mission, for example, requires a significant amount of planning and resources to execute it promptly. The defence policy also recognizes the role played by the military in supporting GAC's diplomatic efforts.

Defence diplomacy and partnerships are necessary tools for the government to demonstrate and reinforce its commitment towards its partners and global position

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<sup>13</sup> Department of National Defence. *Strong, Secured, Engaged, Canada's Defence Policy*. Ottawa: DND Canada, 2017, 59.

<sup>14</sup> *Strong, Secured, Engaged, Canada's Defence Policy* defines a large deployment to be between 500 and 1500 personnel and a smaller deployment to be between 100 and 500 personnel in theatre.

<sup>15</sup> Department of National Defence. *Strong, Secured, Engaged*, 81.

relative to existing powers. Canada maintains strong relations with its key allies and partners (NORAD, UN, NATO, US, Five-Eyes Community) and it is now looking at expanding this network. A whole-of-government approach that brings economic, diplomatic and military partnerships is developing in new areas. Africa (through the African Union) and Asia (through the Association of Southeast Asian Nations), amongst others, are identified explicitly in *Strong Secured Engaged*.<sup>16</sup> There is an operational nexus to those partnerships as well, as Canada requires the support of nations in these regions in order to develop the right footprint for future operations.

The previous defence policy, the 2008 *Canada First Defence Strategy*, offered similar, although less specific, objectives for the CAF. *Canada First Defence Strategy* focused on (re-)building the forces internally in order to sustain operations as it recognized a shortage in terms of expertise and personnel to sustain operations.<sup>17</sup> Even then, the policy expected Canadian industry to better align itself with the CAF's needs by promoting the development of capabilities and research that was beneficial to the CAF and vice versa. Unlike *Strong Secured Engaged* however, the previous policy did not provide clear guidance on the CAF's reach into the world and ties to foreign policy objectives but merely mentioned that the foreign, industrial and defence policies should be aligned.<sup>18</sup> As a mean to provide more concrete directions to the CAF, General Walter Natynczyk, the Chief of Defence Staff, issued initial guidance in 2010 regarding the overall permanent presence of the CAF around the globe. The order provided further

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<sup>16</sup> Department of National Defence. *Strong, Secured, Engaged*, 92.

<sup>17</sup> Department of National Defence. *Canada First Defence Strategy*. Ottawa: Government of Canada, 2010, 4.

<sup>18</sup> Department of National Defence. *Canada First Defence Strategy*, 7.



direction and authorization for the establishment of the first operational hubs as part of an initiative to enhance the operational support structure of the CAF.<sup>19</sup>

Although the CAF's directives on operational support are now well-defined and tied to strategic objectives, as this chapter has shown, this was not always the case. The CAF has gone through significant change since World War II in terms of the type of deployment it conducts, where it focuses its resources and how it deploys. Appreciating the past will help to understand how the CAF has gotten the structure it has now and more importantly, why.

## **CHAPTER 2 – HISTORICAL PERSPECTIVE**

History does not come with a start date, thus defining when the CAF began to conduct operations abroad would be subjective. In this document, World War II will define the start point for this section allowing for a relatively homogenous analysis to today's military environment and the addition of airpower pervasive throughout deployments in the era. In response for the changing dynamics of the world and nature of the conflicts since then, the CAF have evolved drastically since its unification in 1968. The institution and its operational support framework have changed with the missions that it conducts. Since the institution is a product of its history, understanding how the CAF has developed since World War II will enable us to understand the way it is organized.

World War II was a demonstration of Canada's ability to come together. Above and beyond those in uniforms, the country's industry showed that it was capable of

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<sup>19</sup> General Walter J. Natynczyk. *CDS Directive for the Establishment of Operational Support Hubs*. Ottawa: NDHQ 13 May 2010.

adapting its practices and contributed significantly to the war effort. When it came to logistics and support, Canada – and all allies for that matter – displayed incredible achievements in very little time; however, the constant war-effort strain on a nation could not be maintained forever.<sup>20</sup> The war demonstrated to Canada’s armed forces the importance of having a strategic and coordinated approach to logistics with respect to both internal and external resources.

The Cold War that followed World War II created an immense focus for the CAF in Europe. At the same time, the CAF began to play a more prominent role in peacekeeping operations under the United Nations throughout the world. Post-World War II but pre-unification was a challenging time for the Canadian Army (CA), Royal Canadian Air Force (RCAF) and Royal Canadian Navy (RCN).<sup>21</sup> Very little synergy was established between services as their mandates and reporting structure in Europe diverged significantly.<sup>22</sup> The Army and RCAF both established significant footprints in Europe but both did so in very different and uncoordinated ways. Understanding that their presence in Europe was for the long-term stability of the region, the CAF footprint consisted of permanent infrastructure in two separate bases, operating similarly to a Canadian domestic base.

The RCAF’s footprint in Europe, for example, is interesting and of relevance to this study. Its establishment in Europe was coordinated through the newly formed North

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<sup>20</sup> Department of Defence. *Australian Defence Doctrine Publication 4.0, Logistics Series Defence Logistics*. Defence Publishing Service, edition 2, 2013, 1A-3.

<sup>21</sup> The terms CA, RCAF and RCN will be used throughout to refer to the separate arms of the CAF, whether they were separate services (before 1968), environments (1968-2011), or commands (post 2011).

<sup>22</sup> Peter Kasurak, *A National Force: The Evolution of Canada’s Army, 1950–2000*. Vancouver: UBC Press, 2013, 79.

Atlantic Treaty Organization (NATO) and the Supreme Headquarters Allied Powers Europe. The RCAF's installations in Europe evolved based on the willingness of the organization to provide infrastructure and the will of the Canadian Government to develop the sites to meet the needs of the services.<sup>23</sup> For aircraft replenishment, the RCAF turned to the US Air Force to assist in the coordination of supporting efforts for its forces in Europe. Since the two nations shared common requirements, this arrangement made the most sense for the RCAF.<sup>24</sup> Most of the other supplies were procured locally through contracts and arrangements under various technical or bilateral arrangements.<sup>25</sup> The RCAF showed minimal appetite to cooperate with the Canadian Army in order to become more efficient, an attitude that ultimately contributed to the push for unification and forced cooperation between the services.<sup>26</sup>

Throughout the Cold War and well into the 2000s, Canada also focused a great deal on contributing to United Nations peacekeeping missions. Overall, over 125,000 soldiers participated in fifty peacekeeping missions since 1948.<sup>27</sup> The size of the missions varied greatly, from individual deployments to large contingents, all primarily supported through direct support from Canada to the theatre of operations on a need basis, and using the well-established United Nations supply chain management.<sup>28,29</sup> This pre-established

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<sup>23</sup> Ray Stouffer, Swords. *Clunks and Widowmakers: The Tumultuous Life of the RCAF's Original 1 Canadian Air Division*. Canadian Forces Aerospace Warfare Centre Production, 2015, 97.

<sup>24</sup> Ray Stouffer, Swords, *Clunks and Widowmakers*, 73.

<sup>25</sup> Ray Stouffer. *Swords, Clunks and Widowmakers*, 149.

<sup>26</sup> Ray Stouffer. *Swords, Clunks and Widowmakers*, 138.

<sup>27</sup> United Nations Association in Canada. *Canada's contributions to United Nations Operations*. Ottawa, 2013, 3.

<sup>28</sup> United Nations. Department of Operational Support. *Supply Chain*. Last accessed 29 April

<sup>29</sup> . <https://operationalsupport.un.org/en/supply-chain>

support and small footprint offered enough flexibility for the CAF to support all UN operations.

The Gulf War of 1991, on the other hand, taught valuable lessons to the CAF. Its contribution to the conflict consisted primarily of a naval and an air task group.<sup>30</sup> The Task Group faced significant issues with regard to forward support and resupply as the CAF did not, at that time, have arrangements with neighboring nations, and relied solely on national support.<sup>31</sup> Although efforts were made to establish their own local support system with host nations, the CAF did not succeed. The issue was resolved only following negotiating arrangements with other contributing nations such as the US which highlighted the need for Canada to develop stronger logistical network with its partners.<sup>32</sup> In the early 2000s, the CAF was supporting large contingents in both BosniaHerzegovina and Afghanistan. These intensive commitments tested the limits of the CAF's sustainment capabilities and highlighted a more pressing need for contracted support.

The Canadian contributions in Afghanistan spanned nearly 13 years.<sup>33</sup> Such a long and intense commitment by Canada placed an immense burden on the CAF sustainment system and quickly highlighted its most critical shortfalls. The mission consisted of approximately 2,500 soldiers on the ground and necessitated about 10,000 civilians and military to sustain it.<sup>33</sup> Faced with a lack of a permanent logistical footprint in the area

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<sup>30</sup> Richard Gimblett. *Persian Gulf War 1990-91*. The Canadian Encyclopedia, 11 January 2016. Last accessed 12 June 2019. <https://www.thecanadianencyclopedia.ca/en/article/persian-gulf-war-1990-91>

<sup>31</sup> Jean H. Morin, Richard H. Gimblett. *Operation Friction, 1990-1991 the Canadian Forces in the Persian Gulf*. Toronto, Ontario, Dundurn Press, 1997, 55.

<sup>32</sup> Jean H. Morin, Richard H. Gimblett. *Operation Friction, 1990-1991 the Canadian Forces in the Persian Gulf*. Toronto, Ontario, Dundurn Press, 1997, 56.

<sup>33</sup> Veterans Affairs Canada. *The Canadian Armed Forces in Afghanistan*. Last modified 14 February 2019. Last accessed 18 April 2019. <https://www.veterans.gc.ca/eng/remembrance/history/canadian-armed-forces/afghanistan> <sup>33</sup>

Department of National Defence. *Canada First Defence Strategy*, 15.

and integral strategic air assets, the operational support needs over the length of the mission placed Canada in the awkward situation of having to rely on partners for operational support. It was in support of the Afghanistan efforts that the concept of operational hub was first developed for the CAF. The opening of Camp MIRAGE in the United Arab Emirates, from which the theatre could be resupplied, was an early demonstration of this concept.

The CAF has made use of contracted solutions for operational support throughout its history and to various degrees. Whether it be to augment its force or fill a gap, contracted resources are almost always utilized by the CAF, both at home and abroad.<sup>34</sup> Domestically, the CAF rely more and more on contracted solutions, whether it be to provide maintenance, base services or to manage infrastructure. The CAF's limitations concerning personnel and priorities especially have pushed DND to "civilianize" areas of responsibilities that are not as time or mission sensitive. This trend first rose in popularity in the 1970s and 1990s with the New Public Management framework and rise in alternate service delivery approach.<sup>35</sup> It has again gained popularity in recent years with the case of the operation and maintenance of forward operating locations in the Canadian Arctic or contracted services for the provision of operation and maintenance for small bases such as Goose Bay and Moose Jaw.<sup>36</sup> Canada's use of contractors in support of expeditionary operations has not been consistent in the last few years but instead has been used ad hoc. The provision of camp services such as

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<sup>34</sup> Lieutenant General Andrew Leslie. *Report on Transformation 2011*. Ottawa: Department of National Defence, 2011, iv-x.

<sup>35</sup> Jill Anne Chouinard and Peter Milley. "From New Public Management to New Political Governance : Implications for Evaluation." *Canadian Journal of Program Evaluation* 30.1, Spring 2015, 2.

<sup>36</sup> Lieutenant-Colonel Michael Rostek. "A framework for fundamental changes? The management command and control re-engineering initiative." *Canadian Military Journal*, Winter 2004-2005, 69.

cleaning and kitchen services, for example, is often seen as more efficient contracted than using Canadian personnel and are roles that can often be fulfilled by local resources through local contracts. Bosnia and Afghanistan were the last two large scale uses of contracted support, with the use of the Canadian Forces Contractor Augmentation Program (CANCAP). First established in 2002 as a means to reduce the strain on specialized trades, especially during a period of reduced budget and staffing in the CAF and heightened operational tempo, the contract provided significant support to DND in both Bosnia-Herzegovina and Afghanistan.<sup>37</sup> The CAF has not drawn on the program since Afghanistan. Since then, only minor use of in-theatre support has been utilized, mainly in the form of standing offers, supply arrangements, host nations or coalition contracting support and direct local procurement. These are just some examples of contracts in support of operations and they fall within the suggested type of contracted support for in-theatre support which includes leveraging coalition contracting, standing offers and supply arrangements, host-nation support, pre-facilitated contracts or direct local procurement. The RCN, as an example, has long made use of contracted solution for port services and sustainment. Their arrangements allow the logistical footprint onboard to remain minimal and maximizing external assistance. Although this model will not be studied in this paper, it demonstrates the potential for partnerships with industry in delivering sustainment to operations worldwide.

The CAF has demonstrated a history of resiliency to adapt and find ways to achieve its objectives. From the intense contributions of industry during World War II to

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<sup>37</sup> Department of National Defence. *Canadian Forces Contractor Augmentation Program*. Last modified 6 July 2018. Last accessed 18 April 2019.  
<http://www.forces.gc.ca/en/news/article.page?doc=canadian-forces-contractor-augmentationprogram/hnocfnif>

the sustainment of a multitude of smaller deployments across the globe under the United Nations, the CAF's operational support framework always evolved in a reactive response to immediate need, rather than as the deliberate framework tailored to the resources and tasks of the CAF. The strategic framework that surrounds its operations is both an opportunity and a threat to CAF operational support, often bringing a degree of certainty and reference points to the planning but also bringing forth factors outside of the CAF's control. These circumstances demonstrate the importance of agility and flexibility in the CAF's concept of operational support. Moreover, the CAF's ability to provide this support in the future will be affected by the changing operating environment, from world dynamics to technologies and government priorities. Understanding this changing environment is critical to plan the right concept of support moving forward.

## CHAPTER 3 – OPERATIONAL PERSPECTIVE

Operational support is not only influenced by the strategic environment in which it operates, but also by the operating environment. Changes to the operational requirements means the CAF concept of support to be flexible enough to meet new demands rapidly. This chapter will, therefore, cover the changing environment in which the CAF is operating as well as the current doctrinal model of operational support. It will pinpoint constraints and restraints imposed on the CAF and identify shortfalls with the existing model based on recent experience.

### Future Operating Environment

The operating environment in which the CAF and key allies are expected to operate is changing and getting more complex. This has been recognized by allies and businesses and is being studied by most militaries.<sup>38</sup> The exercise of predicting the future is incredibly complex and easily fooled by rare events that can change the course of the world. Canada's defence policy *Strong Secured Engaged* considers this future environment. It concisely lists the implications for the CAF: “Canada requires an agile, well-educated, flexible, diverse, and combat-ready military capable of conducting a wide range of operations at home and internationally.”<sup>39</sup>

Internal to the CAF and the department, the Chief Force Development released a document in 2014 highlighting this complexity. *Future Security Environment 2013-2040* examines past and current trends in order to provide insight into changes to threats,

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<sup>38</sup> Joint Chiefs of Staff. *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World*. Joint Force Development, July 2016, 41-43.

<sup>39</sup> Department of National Defence. *Strong, Secured, Engaged*, 57.



operating environments and conditions that the CAF will face in the years to come. It is meant to generate discussions and influence the development of capabilities.<sup>40</sup> Since this reference document is internal to the CAF, it may diverge from other academic publications on this subject. This creates a risk for the defence industry who may potentially find itself on a divergent path.

Of relevance for this paper, key trends highlighted include the globalization of economies, the growing role of science and technology in delivering combat effectiveness and resources, and the flexibility that is being expected from militaries moving forward. This flexibility is required to adapt to how it operates under various conditions.<sup>41</sup> This flexibility trend, paired with the persistent pressure to lower operating cost, is of substantial importance in the field of logistics and support. The CAF and its allies will be under significant pressure to become more lean and agile, especially in the delivery of operational support (as it is a significant cost to operations). This is noted in multiple future operating environment documents, including that of the US and Australia.<sup>42</sup> In *Hybrid Logistics Program*, the US Marine Corps recognizes that the evolved environment, especially that of a near-peer conflict will force them to have the capacity to move and maneuver much more rapidly than ever. It states: "[US Marine Corps] forces will require 'modular' logistical capabilities that still move 'mountains of steel,' but do so in a way that is tailored and supportive of our distributed force design."<sup>43</sup>

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<sup>40</sup> Chief Force Development. *The Future Security Environment 2013-2040*. 17 Wing Winnipeg Publishing Office, NDID # A-FD-005-001/AF-003, 2014, vii.

<sup>41</sup> Chief Force Development. *The Future Security Environment 2013-2040*, 104-105.

<sup>42</sup> Vice Chief of the Defence Force. *Future Logistics Concept 2035*, 2012, 5.

<sup>43</sup> United States. *Installations and Logistics, United States Marines Corps Hybrid Logistics, a blend of old and new*. 2016, 3.

The use of contracted support is seen as a resource-saving measure for militaries as it allows them to focus their resources on direct warfighting capabilities.<sup>44</sup> Contracting is used for operational support, but it can also include other functions such as security and reconstruction.<sup>45</sup> This trend may continue, especially for significant and sustained operations where resources become significantly under stress, but it will also grow as a solution to the flexibility problem if the CAF and its allies do not become more agile in their own delivery of service.

This new environment is forcing Canada to deploy more rapidly and with a far less robust conventional force package.<sup>46</sup> The pressure to minimize time and cost while maximizing the flexibility of the support is therefore intense. The CAF's current model aims at meeting this demand and has been shaped over time to address lessons from past experiences.

### **Structure and Doctrine**

Canada's operational level is embodied in the Canada Joint Operations Command (CJOC). This organization, although principally known as an operational level headquarters, also commands the Canadian Forces Joint Operations Support Group (CFJOSG). This formation, approximately 970 personnel strong, is responsible for the planning of operational support executed by a Joint Task Force Support Command (JTFSC). These JTFSCs are generally not part of CFJOSG, but rather are force generated

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<sup>44</sup> Ellen M. Pint, John R. Bondanella, Jonathan Cave, Rachel Hart and Donna Keyser. *Public-Private Partnerships: Background Papers for the US-UK Conference on Military Installations Assets, Operations, and Services*. Arroyo Centre, RAND, Library of Congress, 2001, 1.

<sup>45</sup> Chief Force Development. *The Future Security Environment 2013-2040*, 106-107.

<sup>46</sup> Department of National Defence. *Strong, Secured, Engaged, Canada's Defence Policy*. Ottawa: DND Canada, 2017, 57.

through the various command elements (Level Ones) for each mission and attached to the supported Joint Task Forces. CFJOSG's core mandate includes the provision of command and control during the opening of a new theatre, the provision of Communication and Infrastructure Systems (CIS), the control of movements of goods and personnel to and from theatre, the provision of specialist engineering teams, supply specialist, postal services and contracting expertise.<sup>47</sup> CFJOSG does not have control over all of the assets or personnel to execute the full delivery of operational support. It must rely on the support of its higher headquarter, CJOC, and occasionally even the Strategic Joint Staff. Other responsibilities regarding the provision of operational support are assigned to other levels one organizations. This is the case for real property transaction authority, communications connectivity and management of asset life cycles as examples. Various Assistant Deputy Ministers (ADM) have responsibilities within those spheres including ADM (Infrastructure and Environment), ADM (Information and Management), and ADM (Material). This dispersed decision-making affects much more than operational support. It clearly demonstrates the complexity of supporting operations for the CAF.

The concept of CAF support is defined in CFJP 4.0 and supporting doctrinal documentation and is depicted in Figure 1 below. This doctrine thoroughly details the coordination and links between the strategic, operational and tactical support level and recognizes the ambiguity in the demarcations between levels.<sup>48</sup> The support concept was developed iteratively over time, based on lessons learned, allied doctrine and with support from the Defence and Research Development Canada, and is built on a solid academic

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<sup>47</sup> Email from Commanding Officer Interim Operational Support Hub – Dakar, received on 3 April 2019.

<sup>48</sup> Department of National Defence. *CFJP 4.0 Support*, 2-4.

foundation. The CAF concept of support is a coordinated effort between the various levels of sustainment and lines of support. Those lines of support are considered in three segments: national support, strategic lines of communication and theatre support.<sup>49</sup> The national support consists of the capabilities required to project and sustain a force, whereas the strategic lines of communication are concerned with the infrastructure to help sustain and project a force. Lastly, theatre support is concerned with the intra-theatre sustainment activities, normally performed by the deployed components and the Joint Task Force Support Component if applicable.<sup>50</sup>

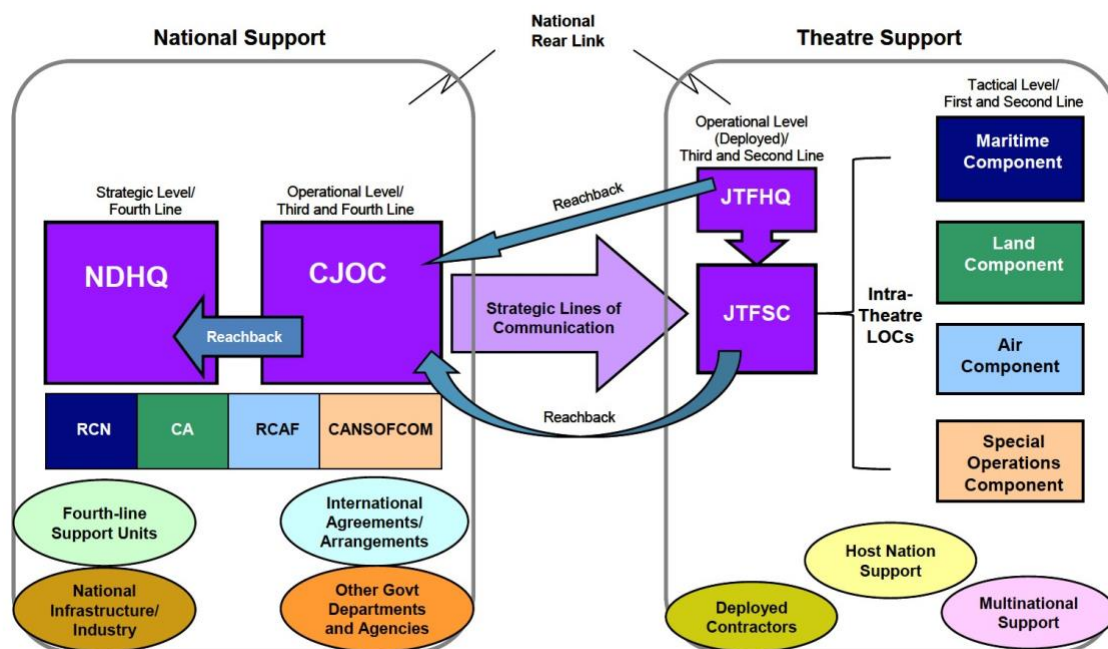


Figure 1 - CAF Support Framework<sup>51</sup>

<sup>49</sup> Department of National Defence. *CFJP 4.0 Support*, 2-2.

<sup>50</sup> Department of National Defence. *CFJP 4.0 Support*, 2-2.

<sup>51</sup> Department of National Defence. *CFJP 4.0 Support*, 2-3.

Operational support, for the purpose of this study, is concerned with national support, strategic lines of communication and establishment of a deployed support structure, involving all three segments of the model. Moreover, since resources are finite to support this concept, the full framework of support must be considered for optimization, and not only specific elements of support. The CAF's operational support network envisions a concept based on a "hub-and-spoke."

The hub-and-spoke approach is defined as "a method of sustaining outlying locations, formations and units from a central and secure position."<sup>52</sup> The CAF establishment of hubs began over 15 years ago as a means to address sustainability issues within its operational support concept.<sup>53</sup> This concept evolved over time and now includes an Operational Support Hub in Kuwait, (OSH-Kuwait), a hub in Latin America and the Caribbean (OSH-LAC), and one in Germany (OSH-Europe).<sup>54</sup> CFJOSG is also operating an interim hub in Senegal in support of Operation PRESENCE in Mali. The hubs are meant to be expandable from "caretaker status" to full activation. It can also be in "cadre status" where it is operated by approximately ten personnel capable of providing the minimum support to operations or in preparation for full activation.<sup>55</sup> The level of services offered is therefore flexible based on need. The hubs are a responsibility of CFJOSG to establish and maintain. In case of full activation, however, additional resources from the Canadian Army, Royal Canadian Air Force or Royal Canadian Navy

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<sup>52</sup> Department of National Defence. *CFJP 4.0 Support*, 2-1.

<sup>53</sup> Ahmed Ghanmi. Defence Research and Development Canada (DRDC). *Modelling and Analysis of the Canadian Forces Operational Support Hubs*. Ottawa: DND Canada, 2008, 1.

<sup>54</sup> Department of National Defence. *Operational Support Hubs*. Last modified 21 August 2018. <https://www.canada.ca/en/department-national-defence/services/operations/militaryoperations/conduct/support/hubs.html>

<sup>55</sup> Department of National Defence. *Operational Support Hubs*.

will augment the personnel in order to respond to the demand.<sup>56</sup> This is presently the case in Kuwait for example where over 100 people are supporting the hub.

The locations of the operational support hubs were chosen with careful considerations by Canada. Operational, scientific and political influences were involved in the selection of the sites and arrangements with the host nations.<sup>57</sup> Significant research by Defence Research and Development Canada's Centre for Operational Research and Analysis in Ottawa and academics across the country has contributed to the foundation of the recent CAF doctrine on support and operational support hubs model. The research team used simulation and optimization methodologies to develop a model for balancing the need for strategic lift and pre-positioning of assets based on the current trends of deployments by the CAF, notably disaster relief, humanitarian assistance, peacekeeping and peace enforcement roles.<sup>58</sup> Several parameters were considered in the analysis including responsiveness and cost-effectiveness. Both the operating environment and failed states index were also used to determine the most likely areas for CAF operations, based on the requirements of a representative force package utilized in previous deployments.<sup>59</sup> Key recommendations from the report indicated the potential benefits to pre-positioning assets sufficient to support a large task force, as well as non-perishable

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<sup>56</sup> Department of National Defence. *Operational Support Hubs*.

<sup>57</sup> Ahmed Ghanmi. *Modelling and Analysis of the Canadian Forces Operational Support Hubs*, iii.

<sup>58</sup> Alain Martel, *et al.* *Designing global supply networks for conflict or disaster support: the case of the Canadian Armed Forces*. Journal of the Operational Research Society, 2013, 579.

<sup>59</sup> Ahmed Ghanmi and David R.H.A. Shaw. *Modelling and Analysis of Canadian Forces Strategic Lift and Pre-positioning Options*. Defence Research & Development Canada, Centre for Operational Research and Analysis, Journal of the Operational Research Society, 2007, 1601.

items that are required by a task force on a "regular predictable rate, such as spare parts, medical supplies, fuel and lubricant."<sup>60</sup>

Despite these significant advances in the development of a comprehensive operational support doctrine, the management of deployable assets for the CAF remains constrained and somewhat disjointed. Managed by specific functional authorities within DND, the coordination and dispatching of equipment to support operations requires a very high level of scrutiny, often slowing the ability of CJOC and CFJOSG to demonstrate flexibility. As an example, telecommunication equipment is coordinated by the CJOC J6 staff but controlled by both CFJOSG, CJOC, ADM(IM) and various command elements (Army, Air Force, Navy). Engineering assets, on the other hand, are managed centrally by CJOC joint engineer staff, but ADM(Mat) manages the procurement and life cycle of the items. Some issues arise when looking at maintaining assets that are deployed, as the life cycle of the equipment may not consider this reality. Additionally, some pieces of equipment, specific to an environment are managed by them directly by them. This is the case for the expeditionary forces aircraft shelter system in the RCAF for example. These environments are expected under current concept of operations to deploy their integrated infrastructure and only request assistance from CJOC in case of gaps. This delegation of control further distributes the responsibility and readiness of material and equipment throughout the CAF and limits its agility.<sup>61</sup>

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<sup>60</sup> Ahmed Ghanmi and David R.H.A. Shaw. *Modelling and Analysis of Canadian Forces Strategic Lift and Pre-positioning Options*, 1599.

<sup>61</sup> Department of National Defence. *Ready Force*. Last modified 17 April 2019. Last accessed 8 May 2019. <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/departamental-plans/departamental-plan-2019-20-index/planned-results/ready-forces.html> <sup>62</sup> Department of National Defence. *CFJP 4.0 Support*, 2-20.

Under the provision of pre-facilitated contracts, Canada often makes use of three types of contracts: in-service support contracting, which sees contractors performing support to major CAF equipment in theatres of operation; foreign military sales, which leverages the US Department of Defense; and task order contract.<sup>62</sup> Contracted support to equipment and foreign military sales are regularly used in current theatres of operations, such as aircraft maintenance and provision of food in Kuwait.<sup>62</sup> The CANCAP is an example of a task order contract. It establishes an overarching program, as delineated in CFJP 4-0, for the provision of support and logistics to CAF operations as needed, when needed.<sup>64</sup> An assessment of the program was completed in 2006 by the Chief Review Services of the Department of National Defence.<sup>63</sup> The aim of the assessment was to evaluate the relevance, effectiveness and gaps of the program, and gain an understanding of the value proposition associated with this arrangement.<sup>64</sup> The report concluded that “CANCAP provides the CF with additional operational flexibility . . . In practice, it has proven to be a relevant, responsive and effective tool, especially when used as intended in a mature, low-risk theatre of operations.”<sup>65</sup> The report also highlighted the lack of policy and doctrine to govern the employment of contractors in theatres of operations. It suggested that some additional work in providing the right framework for this integration of sources of support is necessary going forward.<sup>66</sup>

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<sup>62</sup> Based on author’s recent experience in this specific theatre of operation. <sup>64</sup> Department of National Defence. *CFJP 4.0 Support*, 2-20.

<sup>63</sup> Chief of Review Services. *Evaluation of the Canadian Forces Contractor Augmentation Program (CANCAP)*, 1258-147 (CRS). Ottawa, Canada, 2006, ii.

<sup>64</sup> Chief of Review Services. *Evaluation of the CANCAP*, 2.

<sup>65</sup> Chief of Review Services. *Evaluation of the CANCAP*, 4.

<sup>66</sup> Chief of Review Services. *Evaluation of the CANCAP*, 6-7.



It is essential to keep in mind that the CAF, as a public entity, is responsive to the Government of Canada, and ultimately to the Canadian public, especially regarding the spending of funds but also concerning ethics and good governance. Such responsibility is embedded into our laws and provides rigid boundaries through which the CAF and DND must navigate. This reality, somewhat different from industry, is not negotiable and thereby forces the CAF to be innovative in their approach to operational support. Significant financial restrictions and limits on delegations of authorities are imposed on the department.<sup>67</sup> Those restrictions ensure transparent and justified spending of public funds and are critical under a democratic government.<sup>68</sup> Nonetheless, those restrictions can also place significant obstacles on the CAF's flexibility concerning contracting, especially at lower levels or in theatre where the most restrictions are imposed. This reality forces the CAF to build added flexibility in its operational support concepts, doctrines and national support elements as it is unlikely to have the authorities or funds to enable this level of agility in theatre.

The CAF is also limited in terms of personnel. Most trades that contribute to operational support under CFJOSG are doing so as tasks from their own element (Army, Air Force, Navy). The level of experience by those in uniform, therefore, varies greatly and is subject to postings. This causes a loss of corporate knowledge and expertise within

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<sup>67</sup> Department of National Defence. *A-FN-100-002/AG-006 Delegation of Authorities for Financial Administration for DND and CAF*. Ottawa, 2013, 73-75.

<sup>68</sup> Treasury Board of Canada Secretariat. *The Financial Administration Act: Responding to Noncompliance - Meeting the Expectations of Canadians*. Last modified 25 October 2005. Last accessed 19 April 2019. <https://www.tbs-sct.gc.ca/report/rev-exa/faa-lgfp/faa-lgfp03-eng.asp>

the CAF, a problem not easily solved under the current structure for operational support.<sup>69</sup> Canada's doctrine was recently tested during the activation and sustainment of Operation PRESENCE, Canada's contribution to the United Nations (UN) Multidimensional Integrated Stabilization Mission in Mali (MINUSMA).<sup>70</sup> To close this chapter, a look at the Rotation 0 end of tour report provides useful insight into the challenges faced during the activation of a new theatre and most notably with the provision of operational support to the mission.

### **Observations from Op PRESENCE**

Op PRESENCE Rotation 0 was on the ground in Western Africa from 9 July 2018 to 25 January 2019. Task Force Mali was composed of a headquarter element, a National Intelligence Centre in Bamako, Mali, an aviation battalion and National Support Element in Gao, Mali, as well as a tactical airlift detachment and interim-Operational Support Hub in Dakar, Senegal. The mission was capped at 250 personnel, a restriction that impacted the task force's ability to organize itself truly according to doctrine.<sup>71</sup> Key lessons associated with the provision of support include low dollar value contracting, High Priority Requests (HPR) and responsiveness of supply delivery, and the command and control of support personnel amongst the various detachments and lines of support. Each of these observations will be elaborated upon.

Local purchase orders, which are generally used for low dollar value contracting, were extremely limited in Mali, primarily due to the threats and austerity of the joint

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<sup>69</sup> Geoffrey D.T. Shaw. *The Canadian Armed Forces and Unification*. Defense Analysis, Vol. 17, No. 2, 2001, 167.

<sup>70</sup> Colonel Chris McKenna, Task Force Commander. *OP PRESENCE (MALI) Roto 0 – End of Tour Report – 9 July 2018 – 25 January 2019*. Canada Joint Operations Command, 16 January 2019, 1.

<sup>71</sup> Colonel Chris McKenna. *OP PRESENCE (MALI) Roto 0 – End of Tour Report – 9 July 2018 – 25 January 2019 (Unclassified)*, A-1/17.

operations area (JOA). Mundane purchases such as tools, material, and supplies could not be purchased in theatre and required resupply through the CAF supply system, namely through 3 Canadian Support Unit (CSU) in Montreal. 3 CSU being the sole supply unit for all deployed operations, rapidly became overwhelmed with the Task Force demands.<sup>72</sup> This arrangement places an enormous burden on Canada's strategic airlift and supply system, one that was underestimated prior to mission activation. Additionally, "the austerity of financial architecture in the African JOA created significant issues with the payment of vendors and invoices by [Task Force Mali]" as traditional payment methods were incompatible with vendors in the area, resulting in delays for procurement.<sup>73</sup> Moreover, understanding the availability of required resources such as construction material and telecommunication infrastructure is critical to building a feasible plan from the beginning. It cannot be assumed that materials will be available or that provision from Canada is reasonable in terms of responsiveness and cost.<sup>74</sup>

Not all supplies can usually be purchased in theatre. Aircraft-on-Ground and HPR parts orders for example normally rely on Canada's supply system to provide. How these items are shipped to the theatre of operation, however, will be determined based on the most expedient means.<sup>75</sup> An accurate assessment of the line of support and responsiveness of the overall system must be performed during the planning of a theatre opening. This "war

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<sup>72</sup> Colonel Chris McKenna. *OP PRESENCE (MALI) Roto 0 – End of Tour Report – 9 July 2018 – 25 January 2019 (Unclassified)*, 17.

<sup>73</sup> Colonel Chris McKenna. *OP PRESENCE (MALI) Roto 0 – End of Tour Report – 9 July 2018 – 25 January 2019 (Unclassified)*, 18.

<sup>74</sup> Colonel Chris McKenna. *OP PRESENCE (MALI) Roto 0 – End of Tour Report – 9 July 2018 – 25 January 2019 (Unclassified)*, Q-3/4.

<sup>75</sup> Department of National Defence. *CFJP 4.0 Support*, 7-5.

gaming" of logistical support may bring forward different course of action considerations for the planning team.

Force levels are often capped before a genuine appreciation for the composition of the task force can be gained. These caps place a burden on the task force to trim its organization to fit within the cap, often at the detriment of the support structure. This is understandable as the focus should always remain on the delivery of the effects on the mission, however it puts the doctrinal structure of command and control under scrutiny while simultaneously making it difficult to achieve. Task Force Mali lived these challenges as their support structure was fragmented amongst the various detachments and sections. Being too small, with respect to its structure (due to the personnel cap imposed by the government), each deployed unit had to help each other, further greying the highly distributed lines between the levels of support and elements.<sup>76</sup> This is not uncommon, but it can create friction amongst the sections, and potentially limit the synergy that can be gained from the overall support personnel. Furthermore, since operational support englobes any support that is "beyond the capability of support units at the tactical level," it brings a level of uncertainty and a grey area.<sup>77</sup> Ultimately, various tactical units or task force elements will have disparate levels of internal support depending on the mission, timeframe or resources available. These arrangements risk becoming highly personality based and reduce the accountability of the organizations in charge.

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<sup>76</sup> Colonel Chris McKenna. *OP PRESENCE (MALI) Roto 0 – End of Tour Report – 9 July 2018 – 25 January 2019 (Unclassified)*, K-1/6.

<sup>77</sup> Department of National Defence. *Support to Operations*. Last modified 25 July 2017, last accessed 19 April 2019. <https://www.canada.ca/en/department-nationaldefence/services/operations/military-operations/conduct/support.html>

These observations from Operation PRESENCE demonstrate the challenges that the current doctrinal model of operational support faces. The shortfalls in equipment and personnel, delegations of authorities and logistical network continue to test the agility of the support system. The risks to achieving the mission are too often only alleviated by the professionalism and agility of the personnel involved and not by the structure of the support system itself. This is not sustainable or efficient. The CAF must therefore build an operational support concept that acknowledges the restrictions imposed on the CAF, limits in resources and ambitions of the government.

## CHAPTER 4 – FACING THE SAME ISSUES: ALLIES PERSPECTIVE

Canada's allies face similar issues when it comes to operational support. Fiscal pressures force them to look at how they do business and their foreign policies while history dictates the type of work they are to perform.<sup>78</sup> Although their geographic and military capabilities differ drastically from one to another, parallels are present. The US, the UK, and Australia deploy to similar areas of the world and follow doctrine that is comparable to that of Canada. Understanding the structure and approach to operational support of these nations can help understand the similarities and the potential benefits for Canada.

### United States

The US military has developed, since the Cold War, a strong network of active bases around the world, providing them with a robust sustainment network. Their diplomatic relations with their host nations are different from Canada's. The US foreign policy, which drives the nation's military and diplomatic actions abroad, places great emphasis on bilateral arrangements with nations across the globe. These arrangements place greater flexibility and negotiating powers in the hands of the US and ultimately contribute to its ability to develop a strong network of permanent infrastructure across the globe.<sup>79</sup>

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<sup>78</sup> Lieutenant-Colonel (USAF) Roy Bacot, Lieutenant-Colonel (USAF). "Global Movements and Operational Support Hub Concept: Global Reach for the Canadian Forces," *The Canadian Air Force Journal*, Vol 2, No. 3, 10.

<sup>79</sup> Thom Shanker. *Gates Discusses Bolstering Asian Security*. The New York Times, 1 June 2011. Last accessed 18 April 2019. <https://www.nytimes.com/2011/06/03/world/asia/03Gates.html>

The US support concept is divided clearly between the strategic, operational and tactical levels, with designated resources and tasks assigned to each level. At the strategic level, logistics considers all capacities afforded to the department either by US industries, government and agencies in order to project and sustain military power.<sup>80</sup> At the operational level, logistics are defined as "the art of applying the military resources available to operating forces to achieve national military objectives in a theatre or area of operations or to facilitate the accomplishment of assigned missions in a military region, theatre, or campaign."<sup>81</sup> The US tactical level contains solely "the planning, coordination, and execution of the six functional areas of logistics (supply, maintenance, transportation, health services, general engineering, and services) within the organic logistic capabilities of the [task force]."<sup>82</sup> This is similar to Canada, notwithstanding the fact that the resources assigned to these functions by the US to these functions are much more robust, ensuring a more consistent ability to deliver services, both as a joint force and for each branch of its military. Their model of support has gone through significant changes over time. The Department of Defense (DOD) acknowledged in the 1990s that their strategic supply system was broken and inefficient. This was especially evident following Operation DESERT STORM.<sup>83</sup> It also recognized that although each service was pursuing initiatives to enhance their logistics operations; those inefficiencies were evident especially concerning the global movements of assets and goods and disorganized hub

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<sup>80</sup> Headquarters United States Marine Corps. *MCTP 3-40C Operational Level Logistics*. PCN 147 000068 00, Washington, 2016, 1-1.

<sup>81</sup> Headquarters United States Marine Corps. *MCTP 3-40C Operational Level Logistics*, 1-1.

<sup>82</sup> Headquarters United States Marine Corps. *MCTP 3-40C Operational Level Logistics*, 1-2.

<sup>83</sup> Marc Robbins, Patricia Boren, and Kristin J. Leuschner. *The Strategic Distribution System in Support of Operation Enduring Freedom*. RAND Corporation, National Defense Research Institute and Arroyo Center, DB-428-USTC/DLA, 200, 3.

systems.<sup>84</sup> This led DOD to create the strategic distribution management initiative whose goal was to seek to optimize the use of commercial and military lifts to respond to the demands of the services in the most efficient manner.<sup>85</sup>

Internally, other branches were also keen to review and optimize their support concept based on their understanding of the operating environment, principal criteria for success and objectives, and internal resources. In their joint doctrine, the US Joint Chiefs of Staff have placed their emphasis on three “imperatives”: unity of effort, joint logistics enterprise visibility, and rapid and precise response.<sup>86</sup> These priorities are aligned with the need to operate in the future environment described in Chapter 3, which requires agility and flexibility. The US joint doctrine also emphasizes the necessity, especially in crisis response, to work in unity with partners such as the private sector, other government departments and agencies as well as international organizations and nongovernmental organizations.<sup>87</sup> It is therefore critical to understand the opportunities and threats that such integration may bring and plan for it in collaboration with those entities external to the US DOD, but also internal to the department, amongst each service.<sup>88</sup>

The US Marine Corps, who has been putting much effort into overhauling their support concept in light of the predicted future operating environment, focuses its logistical support on seven fundamental principles. These are meant to help in planning

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<sup>84</sup> Marc Robbins, Patricia Boren, and Kristin J. Leuschner. *The Strategic Distribution System in Support of Operation Enduring Freedom*, 6.

<sup>85</sup> Marc Robbins, Patricia Boren, and Kristin J. Leuschner. *The Strategic Distribution System in Support of Operation Enduring Freedom*, 18.

<sup>86</sup> Joint Chiefs of Staff. *JP 4-0 Joint Logistics*. 2013, I-5.

<sup>87</sup> Joint Chiefs of Staff. *JP 4-0 Joint Logistics*, I-1.

<sup>88</sup> Joint Chiefs of Staff. *JP 4-0 Joint Logistics*, V-2.



and increasing effectiveness of the logistical tail. These factors include responsiveness, simplicity, flexibility, economy, attainability, sustainability, and survivability.<sup>89</sup> The US Air Force, not surprisingly considering their unique operational needs, sees operational support slightly differently. It sees its operation as much more efficient when relying on a robust solution rather than a lean, highly flexible one. The reality of the US Air Force planning considerations is that the establishment of a strong network of support can be adapted to any situation and is simultaneously more cost-efficient than attempting to plan for the most optimal network for the situation.<sup>90</sup> Therefore, it was in the US Air Force's interest to develop strong diplomatic ties with allies to establish semi-permanent and permanent air bases that can serve a backbone to their operations.

The US Navy Over-The-Shore sustainment is primarily delivered through the use of the Navy Expeditionary Logistics Support Group (NELSG), under the Naval Expeditionary Combat Command.<sup>91</sup> This reserve group consists of four regiments capable of providing logistical support to the Navy, including support to operations such as cargo handling, warehouse and fuel distribution, real-life support, customs and postal services, communications and explosive ordnance disposal. These services are often expended to support other services operating in the area as well. The US Navy concept of support has been proven in the past, especially in support of Operations IRAQI FREEDOM and ENDURING FREEDOM, but may lack the agility required in the future

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<sup>89</sup> United States Marine Corps. *Marine Corps Warfighting Publication 3-40 Logistics Operation*, Marine Corps Combat Development Command, PCN 143 000058 80, 2016, 1-6.

<sup>90</sup> Mahyar A. Amouzegar *et al.* *Evaluation of Options for Overseas Combat Support Basing*. United States Air Force, Project Air Force, RAND Corporation, Library of Congress, 2006, 5.

<sup>91</sup> United States Navy. *Navy Expeditionary Logistics Support Group*. Last accessed 19 April 2019. <https://www.public.navy.mil/NECC/navelsg/Pages/AboutUs.aspx>

operating environment.<sup>92</sup> The US Navy is, therefore, striving to revamp its model of sustainment in order to be agile and adaptable to the future operating environment. As described in the National Research Council publication *Naval Expeditionary Logistics Enabling Operational Maneuver from the Sea*, “The goal is to replace slow, cumbersome logistics processes that are predicated on large volumes of materials that might be needed, with responsive, or, when possible, anticipatory processes that deliver only what is needed, when and where it is needed.”<sup>93</sup>

The US Army’s operational support doctrine, for its part, focuses on eight principles of sustainment from which they derive their doctrine. These include the integration of all sustainment elements, anticipation and foresight, responsiveness, simplicity, economy, survivability and continuity.<sup>94</sup> Those are quite similar to the US joint doctrine and US Marine corps principles. The Army, like the Joint Chiefs of Staff and the US Navy and Marine Corps, has identified a gap between their current logistic processes and that required in the future. The National Research Council Board on Army Science and Technology established the committee on force multiplying technologies for logistics support to military operations to address its need to improve logistics support. This Force Multiplying concept rests on a few imperatives ranging from the reduction of logistical requirements (the need), improvement in the lines of distributions and the use of technology as a means to reduce logistical burden (the means) as well as revisiting the

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<sup>92</sup> Mass Communication Specialist 2nd Class Matthew Snodgrass. *CTF-56 Serves Multiple Roles in 5th Fleet*. Last modified January 25, 2009. Last accessed 19 April 2019. <https://web.archive.org/web/20090414151234/http://www.cusnc.navy.mil/articles/2009/013.html>

<sup>93</sup> National Research Council. *Naval Expeditionary Logistics: Enabling Operational Maneuver from the Sea*. Washington, DC: The National Academies Press.1999. <https://doi.org/10.17226/6410>

<sup>94</sup> Headquarters Department of the Army. *Army Doctrine Publication (ADP) 4-0 Sustainment*. Army Publishing Directorate, July 2012, 3.

use of contracted resources (the cost).<sup>95</sup> Research is being conducted to reduce the logistical footprint of the US Army deployments in recognition of those imperatives. At Base Camp Integration Laboratory of Fort Devens, for example, the Army is testing various new technologies and methods to reduce the demand on raw material and supplies such as fuel and water. As noted in 2011 by the Assistant Secretary of the Army for installations, energy and environment, Katherine Hammack, “70 to 80 percent of resupply weight in theatre consists of fuel and water.”<sup>96</sup><sup>97</sup> Reducing such a demand could therefore be extremely beneficial in terms of economy of scale, reduction in risk to personnel and reduction in overall cost for the missions.

The Army also makes use of operational contract support frequently to augment its capacities in and outside of theatres of operations. The operational contract support performs three specific functions: contract support integration, contracting support, and contractor management.<sup>98</sup> This includes the use of logistics civil augmentation program (LOGCAP), which is similar to the CANCAP contract in Canada. LOGCAP provides sustainment, construction and other services and supports the US Army with the planning of logistical processes. The program is flexible in term of what it can deliver for specific theatres based on the type of operations and the requirements of the Army.<sup>99</sup> This is

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<sup>95</sup> National Research Council. *Force Multiplying Technologies for Logistics Support to Military Operations*. Washington, DC: The National Academies Press, 2014. <https://doi.org/10.17226/18832>, 20.

<sup>96</sup> Bob Reinert. USAG-Natick Public Affairs. *Base Camp Integration Lab opens at Fort Devens*.  
<sup>97</sup> June 2011, last accessed 9 April 2019.

[https://www.army.mil/article/60473/base\\_camp\\_integration\\_lab\\_opens\\_at\\_fort\\_devens](https://www.army.mil/article/60473/base_camp_integration_lab_opens_at_fort_devens)

<sup>98</sup> Headquarters Department of the Army. *Army Technical Publication (ATP) 4-10.1 Logistics Civil Augmentation Program Support to Unified Land Operations*. Army Publishing Directorate, August 2016, 1-2.

<sup>99</sup> Headquarters Department of the Army. *Army Technical Publication (ATP) 4-10.1 Logistics Civil Augmentation Program Support to Unified Land Operations*. Army Publishing Directorate, August 2016, 1-1.

principally used for the delivery of external support contracts and is typically managed at a higher level than theatre, under a single contract umbrella. The US Army has also established overarching contracts to simplify its access to logistics service and support. A recent example of this type of arrangement is the massive contract called the Enhanced Army Global Logistics Enterprise – EAGLE.<sup>100</sup> Managed at the operational level by the Army Sustainment Command, the program aims to provide support to maintenance operations, supply operations, and transportation services. It can provide stock, movement, training and equipment for the Army, on a need basis. This contract is seen as drastically reducing the administrative burden associated with smaller, specific contracts, and promises to deliver a much more flexible logistical support to the Army as a result.<sup>101</sup>

It is therefore apparent, from the changes implemented in the last decade, that the US DOD appreciates the need to adapt their operational support concepts to meet the new operating environment. Each branch and the joint chiefs have identified flexibility and agility as the key to meet future demand and are working on an innovative solution. The department has also recognized the potential that contracted resources may bring to the fight as a way of lightening the burden of sustainment on uniformed personnel.

## **Australia**

Australia may be Canada's most similar Five-Eyes partner. With a defence force of similar size, challenges with geographical isolation and similar foreign interests, it is of the utmost interest to Canada to study Australia's approach to operational support.

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<sup>100</sup> Inspector General, U.S. Department of Defense. *Enhanced Army Global Logistics Enterprise Basic Ordering Agreements and Task Orders Were Properly Executed and Awarded*. Alexandria, Virginia, Report No. DODIG-2014-095, July 2014.

<sup>101</sup> Dana Grinshpan. *Enhancing Army Global Logistics Enterprise*. Government Executive, General Dynamics, 2013. Last accessed 9 April 2019.  
[http://cdn.govexec.com/media/gbc/docs/eaglecntret\\_final\\_rev3.pdf](http://cdn.govexec.com/media/gbc/docs/eaglecntret_final_rev3.pdf)

Australia's foreign policy has long been focused on regional influence and prosperity, therefore removing the need for the constant projection of assets and rapid response. However, with the increase in non-state actors and instability globally, Australia is placing a greater emphasis on stabilization operations and participation in more global engagements alongside the US and like-minded allies, as described in their 2016 Defence White Paper.<sup>102</sup> Australians have demonstrated this appetite with their recent participation in Afghanistan and Iraq amongst other major coalition deployments. Additionally, in a similar fashion to the US and Canada, the Australia's Army, in particular, has developed a future operating environment paper to help guide their activities and priorities. The 2014 *Future Land Warfare Report* focuses on five trends that will influence its land operations: crowded, connected, lethal, collective and constrained.<sup>103</sup> Australia's defence white paper also highlights the need to have a force that is adapted to the future operating environment.<sup>104</sup> One can deduct from these observations that the forces on the ground will not have the same capacity, space or security required to establish and maintain a sizeable logistical footprint. It must therefore develop techniques to remain lean in theatre, while supporting the forces adequately and safely.

Australia's doctrine on logistics focuses on three key aspects: the very close relation between operational support and defence strategy; the nature of the environment that requires them to have an agile, robust, precise, networked, interoperable and deployable logistics; and the globalization of logistics.<sup>105</sup> Those elements were also

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<sup>102</sup> Department of Defence. *2016 Defence White Paper*. Canberra, 2016, 118.

<sup>103</sup> Department of Defence. *Future Land Warfare Report*. Commonwealth of Australia. 2014, 4.

<sup>104</sup> Department of Defence. *2016 Defence White Paper*, 165.

<sup>105</sup> Department of Defence. *Australian Defence Doctrine Publication 4.0, Logistics Series Defence Logistics*. Defence Publishing Service, edition 2, 2013, 2-1.

highlighted in Australia's *Future Logistics Concept 2035*, a founding joint document providing strategic guidance to the Australian Defence Logistics Enterprise and industries.<sup>106</sup> As such, it appreciates the intricacy of involving commercial and partners as part of their operational support concepts, understanding the limitations that it might cause.<sup>107</sup> That being said, it also recognizes the risks associated with this approach, whether it be risks associated with the business, personnel, reputation or to the mission.<sup>108</sup> The line between reliance and dependence on commercial capabilities is becoming blurry.<sup>109</sup> This decision to forfeit self-sufficiency is deliberate and significant in many ways as it is based on the premise that Australia will continue to maintain alliances and international partnerships when contributing to global security efforts.<sup>110</sup> The Australian Defense Force also redefined its fundamental mandate and concluded that the defence of Australia is its core function, with international commitments and humanitarian assistance secondary priorities. This decision drove them to accept this compromise in their model of operational support.<sup>111</sup> This is a fundamental difference between Canadian and Australian principles.

Practically, with nearly 2400 Australian Defense Force personnel currently deployed in nine theatres of operations, all located either in two geographical centers

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<sup>106</sup> Vice Chief of the Defence Force. *Future Logistics Concept 2035*, 2012, 10.

<sup>107</sup> Department of Defence. *2016 Defence Industry Policy Statement*. Canberra, 2016, 19.

<sup>108</sup> Department of Defence. *Joint Doctrine Note 1-18, Operational Contract Support*. Joint Doctrine Directorate, edition 1, 2018, 6-2; 6-5.

<sup>109</sup> David Pfotenhauer. "Operational Contract Support (OCS): Conceptual and Doctrinal considerations for the Australian Army in Future Landward Operations." *Australian Army Journal*, autumn 2018, Volume XIV, no 1, 141.

<sup>110</sup> Department of Defence. *Australian Defence Doctrine Publication 4.0, Logistics Series Defence Logistics*, 2-2.

<sup>111</sup> David Pfotenhauer. *Operational Contract Support (OCS): Conceptual and Doctrinal considerations for the Australian Army*, 142.

(South East Asia and the Middle East/North Africa), Australia's need for operational support has been principally through their use of allied installations and equipment, and through the use of a semi-permanent base in the United Arab Emirates.<sup>112</sup>

### **United Kingdom**

The UK global footprint is greatly influenced by its history. As a colonial nation, it established and maintained sixteen bases on five continents. This global footprint is referred to in part as "strategic base."<sup>113</sup> The global reach this footprint offers significantly facilitates its operational support concept for its military. The UK was also one of the early adopters of the privatization and outsourcing of defence activities on a large scale.<sup>114</sup> Since the 1980s, the UK has grown its partnerships with the private sector, cleverly reducing its asset management responsibilities by outsourcing its supply or management. The ministry of Defense (MOD) identified six areas where this practice could be beneficial: training, equipment, property and accommodations, support services, utilities and Information technology.<sup>115</sup> This progressed quite rapidly with respect to property and accommodations, where Carillion and Modern Housing Solutions were awarded in 2006 contracts valued over 1.1 billion pounds for the maintenance of DoD infrastructure.<sup>116</sup> These massive contracts have not always proven to be easy to manage for the department. However, the government has not shown an interest in reversing this

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<sup>112</sup> Australia. Department of Defence. *Global Operations*. Last accessed 8 May 2019. <http://www.defence.gov.au/Operations/>

<sup>113</sup> Command of Her Majesty. *National Security Strategy and Strategic Defence and Security Review: A Secure and Prosperous United Kingdom*. Williams Lea Group, 2015, 28.

<sup>114</sup> Elke Krahmann. *States, Citizens and the Privatisation of Security*. Cambridge, UK: Cambridge University Press, 2010, 84.

<sup>115</sup> Elke Krahmann. *States, Citizens and the Privatisation of Security*, 87.

<sup>116</sup> Elke Krahmann. *States, Citizens and the Privatisation of Security*, 93.

trend but instead has decided to adapt its policy to ensure efficiencies.<sup>117</sup> The MOD believes that "the private sector [is] a positive contributor to their mission" and that the goal of those contracts is to modernize our commodity procurement, warehousing, and distribution and secure a supply chain that will be responsive to the needs of the military, whilst at the same time saving money for Defence."<sup>118</sup> It has also embraced this concept for deployed operations where the UK sees contractors as a force multiplier, one that should be considered wherever practical.<sup>119</sup> The UK are leading the way when it comes to the integration of contractors, and can serve as a model to Canada; however, differences in the countries environment distinguishes them.

Canada's uniqueness in terms of geography, foreign policies, military structure and capabilities explains why Canada's operational support is the way it is, and why it defers so drastically from its key allies and international organizations. Of interest for this study, however, is the direction taken by some countries, especially the UK and Australia when it comes to embracing private resources in their provision of operational support. Further research regarding successes and challenges with their model can create a pathway for Canada to explore these concepts for its own doctrine. It could be argued that in some regards, Canada's operational support has more similarities with Canadian

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<sup>117</sup> Andrew MacAskill. *UK Government questioned over Carillion contracts after profit warnings*. Reuters Business News, 15 January 2018. Last accessed 17 April 2019. <https://uk.reuters.com/article/ukcarillion-restructuring-government/uk-government-questioned-over-carillion-contracts-after-profitwarnings-idUKKBN1F41RZ>

<sup>118</sup> Dan Goure. *Britain's Innovative Military Logistics*. The National Interest, 23 May 2016. Last accessed 17 April 2019. <https://nationalinterest.org/blog/the-buzz/britains-innovative-military-logistics16313>

<sup>119</sup> Ministry of Defence. *Joint Tactics, Techniques and Procedures 4-05, Operational Infrastructure*. 2nd Edition, Development, Concept and Doctrine Centre, Swindon, 2012, 6-1.



industry than with some of its allies. The next chapter will look in more details at the approach taken by industry to achieve operational successes.

## CHAPTER 5 – ATCO FRONTEC: A CANADIAN INDUSTRY PERSPECTIVE

Operational support and services are a growing industry in Canada. More companies and governments agencies are beginning to turn to third party to provide them with the support they need to focus on their business. The services provided by those companies is fairly similar to that provided by the CAF to its theatres of operation or remote sites within Canada, including the Arctic. The competitiveness of the market is forcing the service provider in becoming as efficient as possible and can inspire the CAF in its efforts to become more effective. In order to gain this industrial perspective, the author focused on a single Canadian company, ATCO Frontec.<sup>120</sup>

### Overview of the company

ATCO Frontec is a global business unit (GBU) of the group of company ATCO, which is well known in Canada for its electricity and gas distribution. It is also a familiar name on construction sites across the country. ATCO structure & logistics, a GBU of the company, which until very recently included ATCO Frontec, constructs and installs trailers which are often used for temporary offices and camp installations. Although the de-linking of ATCO Frontec with structure & logistics is on-going, this chapter focuses on the ATCO Frontec operation and organization. ATCO was founded in 1947 as a family business to provide housing accommodations for workers during Canada's first oil boom.<sup>121</sup> Originally referred to as Alberta Trailer Hire, this core business is the

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<sup>120</sup> ATCO Frontec Ltd accommodated a four-week internship from 8 April 2019 to 10 May 2019 at their head office in Calgary, Alberta. The content of this chapter is based on the discussions with over twenty employees representing all levels of the company. Additionally, a review of various internal company directives and project documentation was completed to allow for a fulsome analysis. The following is an interpretation of the author's experiences and conclusions based on the above content.

<sup>121</sup> ATCO Frontec. *ATCO Frontec Core Capabilities*. Presented 8 April 2019, 2.

foundation of the Frontec and ATCO structures and logistics divisions. Since then, ATCO's core businesses have expanded to include a significant role in the country's energy distribution markets in electricity, oil and gas. The company is now a diverse, global enterprise that operates in over one hundred countries and employs over 7,000 people.<sup>122</sup> Throughout the evolution of the company, core business has remained under ATCO Structures and Logistics. Under this GBU, ATCO Frontec emerged in 1986 as the company venturing into working "on the frontiers," by initially providing service support to the North Warning System in the Canadian Arctic.<sup>123</sup> The brand has been expanding since then as the company has taken on new roles in the Arctic, internationally and in the provision of facility management and operational service support throughout Canada. ATCO supports military deployments, governments and non-government clients alike.

Recently, a decision was taken to remove ATCO Frontec from under ATCO Structures and Logistics due to significant expansion in recent years. This was to provide for better focus and attention on the Frontec venture. The separation between the two divisions is not yet complete, and some resources continue to be shared. The company is working at diversifying its portfolio further by developing new markets throughout the world.<sup>124</sup>

ATCO Frontec's mission and vision were re-established in early 2018 when the entire company underwent a significant strategic review. Their vision is now "[to] be a successful, diversified services company that is respected for its frontier spirit,

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<sup>122</sup> ATCO Frontec. *ATCO Frontec Core Capabilities*. Presented 8 April 2019, 3.

<sup>123</sup> ATCO Frontec. *ATCO Frontec Transition Brief – Strategic Project Overview*. ATCO Intranet, 27 May 2016, 4.

<sup>124</sup> ATCO. *ATCO Ltd 2018, Annual Information Form*. 29 February 2019, 9.

operational excellence, and innovative approach; a company to be proud of."<sup>125</sup> The values embraced by the company are now well defined and are present in everything Frontec puts forward. Those are identified in the Figure 2 below. This vision and values enable the team to operate a lean business. Decision making is pushed to the lowest levels, and everyone is empowered to advance projects benefitting the company.

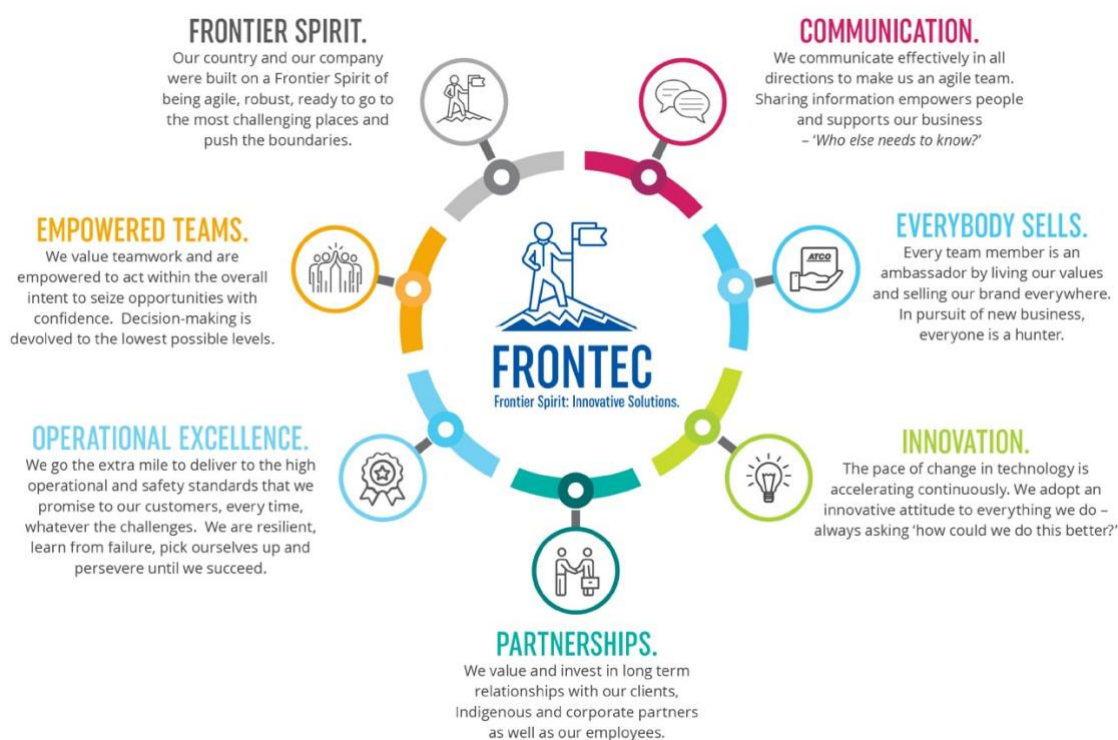


Figure 2 - ATCO Frontec values infographics<sup>126</sup>

Frontec, with its strapline of "Frontier Spirit: Innovative Solutions," is very much focused on projecting anywhere in the world and getting the job done.<sup>127</sup> This has a

<sup>125</sup> ATCO Frontec. *ATCO Frontec Strategy*. ATCO Frontec Intranet. Presented 10 April 2019, 2.

<sup>126</sup> ATCO Frontec. *Frontec Values Infographics*. ATCO Frontec Intranet, 15 November 2018.

<sup>127</sup> ATCO Frontec. *ATCO Frontec Core Capabilities*, 10.

striking resemblance to the CAF's culture, which focuses on delivering effects on moment's notice, anywhere in the world. Obviously, the company is primarily focused on delivering a service to realize a profit – like any other company would – thereby driving them to remain as lean as possible and as efficient as possible. Turn-around time for the establishment of camps, in some instances, may only be a few weeks' notice, forcing the company to make decisions rapidly and to plan concurrently. The company relies heavily on connections within communities to effectively establish themselves and ensure smooth operations.

This community-minded culture is a cornerstone of ATCO Frontec's approach, one that is anchored in the ATCO company at large, being a family business, but also in ensuring its ability to recruit and hire locally in a rapid and effective manner. The company's health and safety programs and its indigenous relations are both examples of the company's care for relationship building. This approach is positioning the company as an employer of choice within communities and as a contractor of choice for entities that are hiring. The company actively works on building bridges with local populations and contractors very early on in projects. As an example, ATCO prides itself in building strong partnerships with First Nations in proximity to their area of operations, notably providing them with training, coaching and employment opportunities. These relationships are fostered throughout the life of a project and are central to ATCO's approach to project development.<sup>128</sup>

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<sup>128</sup> Confidential discussions, 17 April 2019.

The ATCO Group has established a strong culture of risk management, one that is implemented at all levels of the company.<sup>129</sup> Specific to Frontec, senior management is working on changing how risk is being managed within the company, moving the view of risk toward a "contingency planning" style activity, where risks can be assessed and plans to mitigate or react to it can be considered ahead of time. This shift is embedded in the company's line of business, which can seem to be somewhat chaotic and to a degree unpredictable. It is meant to bring an additional level of agility to the company.<sup>130</sup> ATCO Frontec has a will to better itself regarding information management and lessons management. It appreciates the need to integrate lessons rapidly from one project to another or one process to another.<sup>131</sup> That being said, it often gets caught in crisis planning in order to deliver projects on schedule and budget, a reality shared by most industries driven by profit.

The company holds lessons-identified meetings following any new project mobilization (upon stabilization of the operations) as well as upon renewal of contracts. It also maintains a register of lessons throughout the life of the project, per standard project management practice. The company is also in the process of establishing the functions of a project management office in order to "apply and coordinate formal project management discipline" to all phases of the projects contributing to the strategic goals of the company.<sup>132</sup>

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<sup>129</sup> ATCO Frontec. *ATCO Frontec Risk Management – Level Three Risk Narrative*. Calgary, 11 April 2019.

<sup>130</sup> Confidential discussions, 16 April 2019.

<sup>131</sup> Confidential discussions, 11 April 2019.

<sup>132</sup> ATCO Frontec. *ATCO Frontec Risk Management – Level Three Risk Narrative*, 11.

ATCO Frontec is currently operating on three main lines of operations, each focusing on a specific area of the business: North American operations, international operations, and disaster & emergency management.<sup>133</sup> North American operations refers principally to the operational support service in support of domestic clients. This includes facility maintenance contracts with DND and other government departments, the various camp services operations in support of commercial entities such as mines and oil and gas companies and services in remote locations such as the Arctic or First Nations communities across the country. International operations refer to the operational support services in support of operations abroad. This comprises of services in support of military operations and commercial entities abroad (mines, oil and gas). The company currently supports Papa air base in Hungary as well as KFOR in Bosnia. Until 2016, it also had a significant operation in support of NATO in Afghanistan, mainly supporting the Kandahar airfield operations and utility service operations.

Support to international operations is not very different from North American operations in terms of what it provides. The main reason for the divisional separation is due to business considerations in terms of financial structuring and liabilities. Currently, ATCO Frontec is also established in the US, Hungary (ATCO Frontec Europe), and Kenya (ATCO Frontec Pty, which services the entire African continent). Those offices can perform a coordinating function and reach into the various markets as required. The main benefits of having an office “in location” is the development of relationships with potential clients and providers, enhancing the visibility of the company in the region, as well as financial benefits. ATCO Frontec in Europe, officially called ATCO Frontec

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<sup>133</sup> ATCO Frontec. *ATCO Frontec Core Capabilities*, 11.

International, supports ATCO Frontec in the provision of operational and logistics services, rapid deployment expeditionary camps and other consulting services across Europe, Africa and the Middle East.<sup>134</sup> These regional offices play a central coordinating function, enabling the various entities of ATCO Frontec to come together assisted by the various contracted supporting assets such as air movement or locally employed personnel.

Disaster and emergency management, the newest and third branch of Frontec, was established to help support every phase of disaster and emergency management processes from preparedness, response, recovery and prevention and mitigation measures. This small section works with local authorities to build and test preparedness through readiness training, and mentoring, while providing critical services and infrastructure to first responders in case of disasters. It also provides consultancy and support to enable regional governments in recovery efforts.<sup>135</sup> Even before the creation of this separate branch, the company has assisted British-Columbian and Albertan governments during wildfires and other domestic natural disasters.<sup>136</sup> It also participated in the disaster responses in Haiti and Pakistan and responded after floods in Puerto Rico and on First Nations land in Western Canada.<sup>137</sup> The company is currently deployed to Zimbabwe to work with the national and provincial governments affected by cyclone Idai.<sup>138</sup>

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<sup>134</sup> ATCO. *ATCO Ltd 2018, Annual Information Form*. 29 February 2019, 12-14.

<sup>135</sup> ATCO Frontec. *Frontec Core Presentation*, 16.

<sup>136</sup> ATCO Frontec. *British Columbia Wildfires, 150 Miles House*. ATCO Frontec Intranet, 2017, last accessed 8 May 2019.

<sup>137</sup> ATCO Frontec. *Kashmir Earthquake, Emergency Response NATO*. ATCO Frontec Intranet, 2005, last accessed 8 May 2019.

<sup>138</sup> Confidential discussions, 9 April 2019.



**Business Processes and Coordination**

ATCO corporate office provides strategic guidance in the form of targets for the division. ATCO Frontec's Vice President then turns those targets into key performance indicators and objectives for each director who in turn distributes those targets to the various projects. Accountability and management of activities are therefore shared amongst the various levels of the organization based on their ability to achieve those objectives and key performance indicators. Those delegations are very straight forward and ensures a significant level of "buy-in" from all employees involved.

ATCO Frontec's head office is very much established like an operational-level headquarters in military terms, managed internally by a "chief of staff." Each specialized function is represented, and critical activities and resources that are affecting the delivery of service or development of new business are coordinated. For example, as a new business (project) is being considered, resources from each section will come together to facilitate that planning. Under a project development lead, the team will bring the project to fruition – an awarded contract – before being handed to the operations team for execution. Those teams navigate through the ATCO Frontec business development model to complete projects.

ATCO Frontec is in the midst of detailing their business development model in an attempt to streamline the process and find synergies within the company. Until recently, most new business developments were grown out of the experience of the personnel in place and relied heavily on their individual knowledge rather than corporate processes and best practices. The new business development model is a collaborative, iterative visual representation of the flow and involvement by the various section throughout the

life of a project (including before a project is created). This model aims to streamline and ensure parallel planning and provides the company with an overview of the progress of projects. It also helps any new personnel with appreciating their roles and responsibilities as well as the relations they must foster along the way with each department.

Additionally, by involving operations staff into the business development phase, it facilitates the transition and continuity of service throughout the project. Similar to the CAF, ATCO Frontec business development and execution follows practices based on standard project management processes. ATCO Frontec places much emphasis on the "phase zero" and "phase one" operations, as growing new businesses is seen as just as important as developing and executing projects. The company could not achieve success without enabling sections that contribute to the overall business.

Research and development, procurement and human resources, for example, are crucial elements to facilitate the delivery of services. The business of facility maintenance and operational support are all long term in nature, with low margins and performance penalties if not executed to the standard.<sup>139</sup> As such, ATCO Frontec has realized the value of research and development in order to augment those margins and provide a better return on investment. Artificial intelligence and automation can be used as examples to reduce operating cost and increase profit. Research and development in this field include systems such as robotics capable of performing support functions such as cleaning, or automated management systems controlling utilities. For the time being, development relies principally on industry partners and off the shelf solutions. ATCO Frontec is systematically assessing the value proposition of these initiatives, testing them with

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<sup>139</sup> ATCO Frontec. *ATCO Frontec Risk Management – Level Three Risk Narrative*, 12.

specific sites and implementing them as rapidly as the organization can accept it, while respecting limitations regarding fitting and telecommunications.

The procurement capacity of ATCO Frontec is similarly extremely lean. The small team relies heavily on standardized contracts and agreements (especially on the camp support service side). Paired with the local liaison in place, the team will build the right product based on the requirements and previous experience.

ATCO Frontec's lean operation relies on a human resources management that is flexible. Although the company seeks to develop and allow for growth on the key positions within the organization (project managers, section heads, etc.), it has the flexibility to hire locally for the execution of the services as needed. The recruitment system of the company is robust and well streamlined and again is focused on its relationships. Most sections are relatively small and are a mixture of experience and new personnel, all from a diverse background. This team composition offers ATCO Frontec an excellent balance to prepare for future projects. Overall, the group of company (ATCO Group) is working on formalizing its talent management and succession planning for senior management positions in order to help the organization with maximizing the talent of its personnel and structure their development. The company also places emphasis, especially on the project team, on redundancy in competence, allowing them enhanced flexibility in team composition and resource assignments. It avoids creating choke points and streamlines the process.

ATCO Frontec offers off-the-shelf temporary camp solutions similar to the CAF's Relocatable Temporary Camp (RTC) assets. Those scalable "camp-in-a-box," referred to by the company as the *APOLLO Temporary Deployable Camp Infrastructure* can be

shipped and installed in very short noticed and are primarily used for emergency relief support. They are able to provide modular accommodation, kitchen, ablutions, power generation and distribution as well as water and wastewater treatment and storage.<sup>140</sup> This temporary solution is not ATCO Frontec's specialty, but rather is seen as a gap-filling measure, in support of a more significant ATCO Frontec role for example in support of emergencies and disasters assistance. Interestingly, ATCO Frontec does not own the assets themselves. The company has pre-established arrangements with the manufacturer – an American-based company that operates across the globe – for the delivery of the assets upon request. By working with sub-contractor like this, ATCO Frontec reduces its asset holdings but remains agile in its response.

Most of the infrastructure used for installation of semi-permanent camps, the trailers, are either built in the ATCO structure and logistics manufacturer in Calgary or one of their manufacturing plant in the country in question (US, Mexico, Australia) or are moved from one site to another by the operations team of ATCO Frontec. ATCO does not hesitate, if it makes financial sense, to use other companies' assets either as rentals or purchases to meet their goals. This practice gives them maximal flexibility and is efficient mainly due to the network the company has built.

### **Operational Support Concept**

The operational support concept for the various sites is not pre-determined or fixed. Since the client determines the service requirements, the company must adapt its service delivery. Moreover, the location and duration of the contract will influence the

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<sup>140</sup> ATCO Frontec. *APOLLO Expeditionary Camp Infrastructure*. Draft, version 2.

method through which operations support is provided. ATCO Frontec recognizes that the concept also evolves during the life of a project.<sup>141</sup> The process is iterative in nature, intending to reduce operating cost as the problem set gets better defined. For example, the company will work toward reducing supply chain demands by forecasting the need for supplies and balancing the resources in consequences. As it gains ownership and understanding of the problem, it will consider the lifetime of the contract and minimize the cost of operation.

The division of disaster and emergency management is minimal and performs principally an "advice, assist and coordinate" function. It does not, on its own, have the capabilities to develop and manage the deployment of assets and operational support that accompanies it. Instead, the division draws on the company's existing divisions of operations support and structure and logistics to enable its response. The division is given a fair amount of freedom of movement to find and propose solutions to potential clients. However, it remains responsive to the Vice President of ATCO Frontec and the company CEO. These teams are, in a sense, doing the functions of a strategic reconnaissance team from the CAF combined with an operational level reconnaissance and planning team. The team will assess the situation, coordinate with local authorities and make recommendations as to how it can assist. It will then plan and coordinate the deployment of asset and personnel in order to execute the plan. This model is very much in its infancy but has a high potential for continued operations, especially on the advice and assistance before disasters occur.<sup>142</sup>

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<sup>141</sup> Confidential discussions, 11 April 2019.

<sup>142</sup> Confidential discussions, 9 April 2019.

ATCO Frontec is a lean organization that has demonstrated its capacity to deploy extremely rapidly in case of emergency, both in a domestic and international context. Three examples highlight the company's processes responsiveness: the deployment of assets in response to the Albertan and British Columbian wildfires and the response to Hurricane Maria in Puerto Rico. The 2011 forest fire that affected Slave Lake Alberta hit ATCO Frontec at home. Within days, ATCO Frontec mobilized employees and equipment to provide relief efforts and support to those affected. In less than two weeks, ATCO Frontec was operating a 150-person camp to enable the restoration of critical services to the town of Slave Lake, and support emergency relief workers.<sup>143</sup>

In 2017, Hurricane Maria hit the Caribbean island of Puerto Rico, destroying entire towns, killing nearly 3,000 people in Puerto Rico alone and leaving countless families without a roof above their head or any services whatsoever (water, electricity).<sup>144</sup> ATCO Frontec, at the request of a pharmaceutical company in Puerto Rico, deployed a small team to assist in re-establishing its operations. Interestingly, at the time of the deployment, the disaster and emergency management division did not yet exist in Frontec. The team deployed was therefore composed of various skilled personnel from throughout the ATCO Group.<sup>145</sup> Once on the ground, the team provided a recommendation to the pharmaceutical company in how it could restore the pattern of life for its employees to ensure their continued service for the company. Using mainly

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<sup>143</sup> ATCO Frontec. *Slave Lake Fires, Emergency Response and Temporary Accommodations*. ATCO Frontec Intranet, last accessed 9 May 2019.

<sup>144</sup> World Vision. *2017 Hurricane Maria: Facts, FAQs, and how to help*. Last modified 1 August 2018, last accessed 18 April 2019. <https://www.worldvision.org/disaster-relief-news-stories/hurricanemaria-facts>

<sup>145</sup> Confidential discussions, 16 April 2019.

internal resources, it rapidly deployed equipment and personnel to provide laundry services and ice for the employees, as those elements were seen as key in providing the stability required for the employees and was reasonable to achieve. ATCO Frontec, as an early brand on the ground, was also an effective means of introducing the ATCO group to the region, opening doors for future businesses such as electrical distribution for ATCO Electric.<sup>146</sup>

ATCO Frontec provides operational support services to many entities in the Arctic. Amongst the many contracts currently awarded to ATCO Frontec, the company provides facility maintenance to the forward operating locations (FOL) in Canada's North on behalf of Real Property Operations (North) as well as facility maintenance to the Alaskan radar line, a contract under the US Air Force. The Alaska contract has been ongoing for over two decades and is an excellent demonstration of ATCO's sustainment operations. Both contracts cover the real property and construction engineering aspect of sustainment, rather than the full operational support scope. From a business development perspective, ATCO Frontec supports this type of operation in the same manner it would support a camp operation. This is a significant difference from the CAF and DND, who manages domestic permanent infrastructure and temporary installations under completely separate administrative frameworks. Although this section of ATCO Frontec typically works with more predictable timelines, the team maintains the same spirit as the emergency management team and can work and deliver rapid response as required. An

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<sup>146</sup> ATCO Frontec. *Puerto Rico Hurricane Maria Emergency Response 2017*. Project Information Database, ATCO Frontec intranet, last accessed 9 May 2019.

excellent example of ATCO's frantic speed of business in this regard is the on-going project in support of the recovery efforts following forest fires in California.

In the last few months, ATCO Frontec won a contract with the California government to establish and operate a 1,500-person camp in the town of Paradise. The town was devastated last year during the infamous Camp Fire which destroyed nearly 20,000 houses and killed 85 people.<sup>147</sup> The company ECC was retained by the state to complete the reclamation work. ECC subsequently retained ATCO US, to construct an expeditionary man camp to house 1500 personnel. This camp, built in three phases, was requested in February 2019, with a start occupancy of early April. ATCO Frontec, as ATCO's support service provider, mobilized immediately. Within weeks, the small team had established service contracts, hired personnel and worked with ATCO US to construct the camp. Phase 1, which consists of 310 rooms, was ready by 15 April 2019, Phase 2 (1000 rooms) will be ready by 2 May 2019, and Phase 3 (Full operating capability, 1500 rooms) will be reached by 15 May 2019.<sup>148</sup> This incredibly short timeline demonstrates the company's agility, preparedness, coordination and synergies amongst the various sections. To achieve this, a small team of experienced ATCO employees was assigned to the project. This team remained with the project throughout and worked with various sections within Frontec and ATCO US to identify and coordinate the potential procurement of assets and staff required for the execution of the project. Having built a thorough familiarity with the needs of the client and the

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<sup>147</sup> Alastair Gee and Dani Anguiano. *Last day in Paradise: the untold story of how a fire swallowed a town*. The Guardian, Guardian News & Media Limited, 20 December 2018. Last accessed 15 April 2019. <https://www.theguardian.com/environment/2018/dec/20/last-day-in-paradise-californiadeadliest-fire-untold-story-survivors>

<sup>148</sup> Confidential discussions, 18 April 2019.



requirements of the project, the continuity of the managing team is proven to be a vital element of the success of ATCO.

In summary, as this analysis of ATCO Frontec highlights, industry's approach to operational support is somewhat different from that of the CAF. Pressured by different set of parameters such as profit and reduction of overhead costs, their approach is lean and constantly looking for improvements. They explore options outside of their own resources to improve their operations and are, in some ways, a model of operations that the CAF can learn from. These opportunities are discussed next.

## CHAPTER 6 – OPTIMIZATION OPPORTUNITIES

*Throughout history, the organizational evolution of the military has been inextricably linked with that of the business world.*

- General Stanley A. McChrystal, United States Army<sup>149</sup>

The CAF's criteria for success in CFJP 4.0 defines what the organization is seeking to achieve and provides a mean to compare support concept models. These criteria will be used to build a comparison between allies and ATCO Frontec practices and the CAF's current practices. Through this lens, it will be possible to make recommendations on areas where the CAF can optimize its delivery of operational support while meeting the objectives set in the strategic policy, commander guidance and doctrine.

### Criteria for Success

The CAF, according to the CFJP 4.0, assesses operational support success through nine characteristics: foresight, economy, flexibility, simplicity, cooperation, selfsufficiency, visibility, responsiveness, and survivability.<sup>150</sup> Each of those characteristics provides a piece of the puzzle regarding what the CAF is looking for in terms of support.

Foresight is the ability to predict and manage critical support constraints to the force commander's freedom of action.<sup>151</sup> Foresight, along with responsiveness, forces the CAF to look at their global footprint and capacity to respond. This can be critically

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<sup>149</sup> General (retired) Stanley A. McChrystal, *et al.* "General Stanley McChrystal: How the Military Can Teach Us to Adapt" *Times Magazine*. 9 June 2015. Last accessed 1 May 2019. <http://time.com/3904177/mcchrystal-team-of-teams/>

<sup>150</sup> Department of National Defence. *CFJP 4.0 Support*, 1-3.

<sup>151</sup> The discussion that follows on the nine characteristics is drawn from CFJP 4.0 from page 1-3 to 1-5.

analyzed through a scientific analysis of the CAF's desired responsiveness and was in part conducted by DRDC on behalf of Canada Operational Support Command (CANOSCOM). As described in Chapter 3, this exercise led to the creation of the operational support hub concept and activations. Economy refers to the economy of effort required in order for minimum means and resources to be expended or employed in areas other than where the main effort is intended to take place. This includes all resources: financial, human, material and time. It is critical to balance the economy of effort with the risks associated with the specific mission. Flexibility refers to the ability to adapt structures, functions, and procedures to changing situations. Simplicity ensures that the concept and execution of the support plan are as simple as possible. This simplicity will enhance the flexibility of the plan should the situation change. Cooperation internally and externally to DND will help with the economy of effort and effectiveness of the support concept. Cooperation is also critical in understanding the capabilities and limitations of partners. Self-sufficiency simply means that a force initially has, at its disposal, all essential resources to conduct operations for a predetermined period. Visibility on the assets, limitations and resources will significantly affect how much control commanders may have over their support. Responsiveness is characterized by the speed of response to the needs of the military force. Lastly, survivability refers to the ability for the plan to sustain itself in harsh conditions. This is closely linked to the force protection plan designed for the mission and its potential impact on the sustainment plan. These criteria should not be limiting the CAF's ability to support operations, but rather should contribute to it.

Both the criteria of self-sufficiency and visibility, as described in the current doctrine, can impede the CAF's ability to optimize its support concept. By decentralizing the resources, visibility (CAF wide) becomes much more complicated and its management less holistic and efficient. Moreover, self-sufficiency will limit the CAF's ability to leverage partners and foster an integrated cooperative approach with them under the current framework. Arguably, this criterion hinders the CAF's flexibility and agility as it limits the resources to be considered for support. In order for the CAF to better align its support concept to its foreign and defence policy objectives as well as reduce cost and increase effectiveness, it must consider both partnerships and centralized command and control. This consideration is aligned with both allies' concept of support and industry.

### **Comparison with Allies**

Allied forces, like the CAF, are challenged when attempting to keep up to the ever-changing operating environment. The need for an agile concept of support is necessary to meet the demand of their forces and has forced Canada's allies to look outside their own resources to address it. Allied forces are facing shortages in personnel and equipment and are looking to optimize their concepts. The UK and Australia particularly, are steps ahead from Canada, having lean forward to embed third-party resources within their doctrine and testing the limits of this complex relationship. A significant difference between Canada and those countries resides in the particular government's policies surrounding defence industry integration. Although Canada has mentions of such integration in government wide policies, its execution, on a continuous basis, is limited.

Canada has leveraged the US contracting power on deployment on most recent deployments as seen in Iraq and Afghanistan.<sup>152</sup> With the recent progress made by the US with their contractor augmentation programs, Canada will likely be receiving services through such arrangements in support of its own deployments and have an opportunity to assess its effectiveness. It is unclear however if it would make sense financially for Canada to have independent general support contracts in coalition environment.

Like those allies, the CAF must first and foremost assess their true capabilities and core task requirements. It is clear that the CAF does not have the resources to accomplish all that it is required to do, and that industry is a potential solution to manage this gap. It must therefore clearly identify and work on the relationships between defence and industry to build a responsive and competitive network of support. It can also draw lessons from the experiences of those allies and adopt their best practices going forward. The government of Canada must establish strong policy framework to enable this network of support. This cannot be accomplished by the CAF in isolation.

### **Comparison with Industry**

At first glance, it is easy to note some key similarities and differences between CAF operations support and ATCO Frontec's. These similarities are centralized around the services, the culture as well as the structure of the planning functions and overall doctrine regarding the use of temporary infrastructure. The lines of service provided by ATCO Frontec are similar to that of the CAF. Operational service support, facility management and operations are part of the core functions of many support occupations in

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<sup>152</sup> Based on the author's experience in those theatre of operations.

the CAF, notably that of the engineer and logistic branches. Interestingly, due to the high number of ex-militaries in the Frontec management team, many processes are organized in a manner very similar to a military organization.

The ATCO Frontec organization is structured similarly to a lean headquarters. With a planning and coordination manager at the head of the headquarters staff and lines of operations (subordinates to the vice president) aligned by geographical region and specialty, the decision making, and managerial authorities are delegated as low as possible and are balanced. The delegation of authorities' matrix, like DND's, clearly places expenditure authorities limits onto the various level of management, also providing a clear direction on decision making authorities for each level. This is more comprehensive than DND's delegation of authorities in some regard, as it provides a wider scope of delegations to lower level of management for greater monetary value.

ATCO Frontec and DND diverge the most when looking at the overall objectives of the organizations, how it develops and manages personnel and how it manages its assets. On the one hand, ATCO Frontec is primarily concerned with generating revenues and maintaining a strong reputation for quality service delivery is a mean to an end. As such, it may not venture into a project for which the return on investment is limited. On the other side, the CAF is solely focused on delivering a service where and when it is required. Operating cost, although a factor, is far from being the key decisive consideration, while scale of deployment cannot influence the responsiveness of the CAF.

The CAF has a highly valuable model of personnel management and professional development. One hundred percent of the personnel in a position of authority have grown through the organization, learning its way to the top. This is quite different from the

private sector where most positions are staffed through a competitive process, seeking the best person for the job, regardless of time with the company. The key benefit of the CAF's approach is a standardized minimum level of knowledge which helps grow redundancy and succession planning in the organization. ATCO Frontec, on the other hand, has not fully defined the position requirements for managers, leaving a fair amount of personality-based variance between individuals holding the same type of position. This has proven to create a challenge for the organization as it forces its head office to monitor individual performance diligently, especially for new employees.

The management of assets is also significantly different between the two organizations. On the one hand, ATCO considers the physical assets as a cost of doing business. The determination of reusing, procuring or renting assets is solely based on the return on investment, and business opportunities associated with them and the company maintains a very high level of flexibility on this aspect. The CAF, on the other hand, does not necessarily have the flexibility to purchase or sell equipment and material as easily. Therefore, the decision to deploy equipment (operational holdings) from Montreal to a theatre of operations, is often pressured by availability, priorities, and status of the equipment. These items, whether it be a generator, a vehicle or a tent, are treated the same way and subject to a high level of scrutiny.

There are also interesting similarities in the organization and culture of ATCO Frontec and the CAF. Both organizations are focused on “getting the job done” and maintaining a posture to be prepared to operate anywhere in the world on moment's notice. This focus is not always evident in businesses, especially those less client-driven and more focused on processes such as sister-companies of ATCO Frontec, particularly

in the pipeline and electricity distribution industry for example.<sup>153</sup> This attitude is maintained throughout ATCO Frontec by a highly cooperative approach to business development, one that ensures everyone, regardless of role in the organization, contributes to achieving results. Similar to ATCO Frontec's approach, CAF joint doctrine also highlights the need to develop a strong relationship with the host nations. From enhancing the host nations' economy to enhancing the CAF's efficiency, the cooperation and coordination with partners are critical both in the establishment of the sites, but also in the operation of the sites – to minimize the negative impact on the host nations and maximize its gains.<sup>154</sup>

These similarities and differences affect how the entities approach their management of resources and position themselves to meet its objectives. By focusing on the objectives that are the same for both companies, there are a few areas where the CAF can mirror commercial practices as it attempts to become more agile and efficient in its operations.

### **Optimization Areas**

With the restrictions and obligations listed in chapter three in mind, this next section will offer specific areas where the CAF can improve its operational support. It is critical to keep in mind that when attempting to redesign or better a system such as a sustainment system or operational support, changes tend to often focus on a single item at a time (for example expediency) without considerations for secondary effects. It is therefore critical to consider any or all redesign as a whole, proactively instead of having

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<sup>153</sup> Confidential discussions, 16 April 2019.

<sup>154</sup> Department of National Defence. *CFJP 4.0 Support*, 2-21.



to react to other potential issues generated by the change.<sup>155</sup> As such, the areas for potential improvement listed below cannot be implemented on their own without consideration for potential secondary effects.

### **Centralization of decision-making authorities and resources**

Industry's ability to conduct a lean and efficient operation is directly linked to their centralization of resource management and delegation of decision making. Lean operations can not only help an organization in minimizing its operating costs, but also allow it greater agility in its response, a critical criterion for successful operational support. Having the ability to redirect assets and resources rapidly to meet a demand is critical for the CAF given the rapidly changing future operating environment in which it must deploy. Given the restrictions and constraints imposed on the department, the potential for lean operations is not as critical as it would be for a commercial business. Some risks involved with efficiency may be too significant for the department to implement. Where the CAF can potentially make gains structurally is in augmenting its flexibility by centralizing its decision making and resource management processes for support assets, both material and personnel.

Under the current model, the vast majority of technicians and personnel work under their respective elements. The CFJOSG is relatively small and augmented when assistance is required. This renders the continuity of planning and execution and maintenance of a centre of excellence on operational support difficult. The experience and knowledge of those supporting this organization vary greatly, and this "ad-hoc"

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<sup>155</sup> Cal C. Classi, *et al. A Systems Thinking Approach to Managing Sustainment Phase Redesign Planning*. Engineering Management Journal, 2018, 30:1, 68-81, DOI: 10.1080/10429247.1418598, 68.

arrangement is not well suited to create good cohesion and effectiveness within the organization, especially when navigating the grey line between tactical and operational support. As observed recently on Op PRESENCE, the tensions between the various levels of support create a lack of focused support and sub-optimization of the concept. As much as it is critical for support personnel to understand their elements and the intricacy of first line support, a larger portion of officers and technicians must be exposed to planning and execution at the joint level. Units should be dedicated to providing this level of support, without having to reach into each element for additional personnel. The Joint Signal Regiment is an example of this centre of excellence where both human and material resources are centralized to provide overall support to CJOC operations. Mirroring this concept to all aspect of operational support would likely create a very large organization with a wide span of responsibility. This model would modify the concept of force generator and force employer but would also help in managing a minimal pool of highly skilled personnel and specialized equipment to serve the CAF better. In order to establish clear lines between the tactical and operational levels, the concepts of close and general support must be more clearly defined and potentially assigned as a tactical responsibility (close support) and operational responsibility (general support). Centralizing the responsibility and resources required for general support, hence growing CFJOSG's mandate would help the overall CAF's ability to develop and maintain its readiness posture and ability to support operations as a whole; however, it would come at a cost to the individual elements, which would lose a specific ability to operate independently above the tactical level. That being said, given the operating environment, human

resource limitations and requirement for high flexibility and responsiveness from the CAF, it would be wise to consider such doctrinal and organizational change.

The same must be applied to the material resources required for operational support. Unlike industry, it is critical for the CAF to maintain its own supplies. Familiarity of the equipment and compatibility will give the CAF the flexibility to scale and redeploy equipment as it sees fit. The current model does not allow CJOC or CFJOSG to adequately manage the material due to the diversity of the responsible agencies and dispersion of the equipment amongst the various elements and branches. A centralization of those assets under a single umbrella, logically CFJOSG or CJOC, is required. It must include the responsibility to acquire (as a client, not necessarily in lieu of ADM(Mat)), maintain, distribute and train personnel on the assets as well as manage the pre-disposition of all required assets across the world, therefore making full use of the operational support hubs. Managing these assets centrally will also permit the CAF to truly understand its life cycle management and enable it to more effectively, and with more flexibility, assign resources to theatres. This recommendation cannot be implemented without also giving the group the decision-making authority to identify and source the best potential equipment and material for all missions. This may include the use of contracted facilities, host nations accommodations and services or temporary construction which, in theory, are all recognized under CAF doctrine, but rarely executed in a deliberate manner. That would enable CJOC to manage its resources more effectively as a whole.

### **“Phase Zero” logistics operations**

Phase zero may not be officially recognized in Canadian doctrine, but the CAF is undoubtedly no stranger to it. Officially a part of the US joint doctrine, phase zero shaping operations are often referred to as "the preparation of the battlefield." JP 3-0 defines shaping as all “normal and routine military activities . . . performed to . . . solidify relationships with friends and allies. They are executed continuously with the intent to . . . gain multinational cooperation in support of defined military and national strategic objectives.”<sup>156</sup> The CAF performs these types of regularly shaping, whether it be through formal alliances (NATO, Five-Eyes) participations, multi-national exercise participation or the wide network of defence liaison attachés. Through those continuous activities, the CAF maintains its network and connections to facilitate multinational cooperation and support. On the industry side, ATCO, and most businesses for that matter have embraced this concept as leverage for business development. The network of companies, agencies and company branches throughout the world is greatly enhancing its ability to deliver rapid logistical support throughout the world by relying on partnerships. Those partnerships are generally commercial in nature but are also fostered regularly through engagements and connections. The CAF does not maintain an active "phase zero" in its logistics and operational support fields. These networks can be a force multiplier for the CAF in its ability to quickly be able to develop a thorough understanding of the available resources and businesses or relationships onto which the CAF can rely on to establish itself rapidly. The observations following Rotation 0 of Operation PRESENCE demonstrate the benefits that could be gained from a strong network pre-established. This

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<sup>156</sup> Joint Chiefs of Staffs. *Joint Publication 3-0, Joint Operations*. 2016, IV-27.

continuous presence could help in gaining a more accurate understanding of the operating environment and help CFJOSG with establishing a support plan that fits the conditions on the ground. The presence of operational support hubs should be leveraged to enable this network. By maintaining a permanent logistical presence on site, these teams will be able to foster relations while gaining a greater appreciation for the regions and the key players within them. Although there is a cost associated with this approach, it will significantly enhance the CAF's operational support posture, reduce activation time for new theatres of operations, and contribute to the government's foreign strategy objective to foster ties with its allies and partners.

### **Embracing contracting as an integral part of the solution**

A significant strength of ATCO Frontec is the flexibility it has established for itself regarding contracting. The massive network of providers and pre-negotiated agreements allow them to move rapidly in delivering material and equipment anywhere in the world and facilitates their mobilization efforts greatly. It also allows the company to remain extremely slim by exporting the responsibility for asset management and movements to external sources. Similarly, the US, Australia and the UK have also embraced industry as an integral contributor to their operational support. By recognizing the potential involvement of industry in building a sustainable concept of support, nations have contributed to the building of an industry capable of satisfying specific areas of concerns for their respective militaries, whether it be full-scale logistic support or targeted movement support.

The CAF's forward-leaning approach to contracting could consist of either prenegotiated regional contracts, arrangements with host nations, or a "forward logistic

site" type arrangements that could expedite the CAF's reach for resources as needed. As maintaining a defence footprint in foreign countries is subjected to high levels of political scrutiny, partnering with local commercial entities ahead of time can reduce the political pressure while maintaining flexibility. The feasibility of such arrangements should be investigated further, at larger scales. Such arrangements would also allow the CAF to work within the government's Treasury Board directives and policies regarding contracting, as they can be deliberately planned and executed ahead of time. Similar to the CANCAP arrangement, such contract can be scaled up or down based on requirements and rely on the private sector to mobilize and transport goods to location for example. The observations of Rotation 0 of Operation PRESENCE highlighted the challenges of the very long lines of communication and support. With the establishment of such pre-arranged agreements, or contracted support, those lines can likely be reduced drastically, making the operational support network much more manageable by CAF resources, but also interdependent with contracted resources. As security is always a concern when it comes to contractor support to operations, it is important for the CAF to maintain an ability to deliver these services itself. However, when it comes to operational hubs and strategic movements removed from a theatre, contractors could thrive. Moreover, by strategically developing contracts using the CAF's diplomatic and military networks already in existence, the CAF also strengthens the economic ties to host nations, thereby benefiting a broad range of foreign policy objectives.

DND doctrines, strategic and defence policies are not always aligned. This is evident in the integration of contracted solution as part of the normal business practices for the CAF. The doctrine for joint support requires self-sufficiency whereas CAF

defence policy promotes the close relationship between industry and defence. There must, therefore, be clearer direction from the highest level of government as to how to incorporate industry and defence moving forward. Should DND move toward a UK or Australian model, with an active link between the industry and defence, it will have to revisit its doctrine and operational support concept. As outlined in the CANCAP review, there is real value in integrating a contracted solution to bolster DND's operational support concept. Integrating industry as a critical component of the support model, for example in the development and management of hubs on behalf of DND, could help establish the "phase zero logistics operations" as well as provide relief on the CAF strategic airlift assets.

DND cannot implement these recommendations in isolation. The significant impact on the industry and the involvement of Global Affairs Canada in building the long-term relationships must be strategized and implemented in a conscientious manner.

## **CONCLUSION**

As this research demonstrated, the CAF's operational support concept can be optimized by placing more emphasis on a holistic management of all resources assigned to support and developing a more rigid foundation of logistical partnerships early on. It can only do so by considering the strategic framework and institutional constraints place on the organization and consider outside-the-box solutions.

Canada's operational support will always be changing and adapting to the operating environment. From taking operational support for granted during the Cold War to establishing a strong doctrine and assigning dedicated resources to this task, the CAF has come a long way in appreciating the criticality of operational support to achieving the

missions assigned by the government. The strategic framework that guides the demand for operational support is rooted in a need for the Canadian government to establish strong diplomatic ties throughout the world. The CAF and DND are navigating between satisfying the needs of Canada's foreign policies and government priorities and establishing the right footprint to meet the operational needs of CAF operations. The establishment of an operational support construct that offers flexibility and responsiveness to the CAF is no simple task and working with partners in this provision is critical for the sustainability of the plan – the CAF cannot and should not try to do it alone. The incorporation of Canada's strategic objectives and alignment of the CAF's core tasks and doctrine is providing a reasonably robust framework under which an operational support concept can be established and improved. The CAF's distributed structure when it comes to accountability and decision making, paired with the will to have a certain level of self-sustainability, is putting a strain on CJOC's ability to be efficient in its operational support and is creating friction points, but opportunities lay ahead to establish a robust model that can be adapted for any situation.

Parallels can be drawn to the structure and business practices of the ATCO Frontec company. Although motivated by a completely different set of goals, the company offers similar services for both military, governments and private organizations and does so in a highly efficient manner. Appreciating the focus of the company on their “phase zero logistical influence operations” and preparation activities, their lean establishment and their development of a detailed business development framework to ensure efficiencies and cohesion amongst their various functions over the life of a project was eye-opening. The company's proactiveness and its network are giving them an



advantage over their competitors and an ability to establish themselves very rapidly without having to maintain a substantial footprint themselves. The CAF can learn valuable lessons regarding those elements and potentially better themselves.

Additionally, in comparing the priorities and approach of Canada's closest allies, it is interesting to question some underlying assumptions made by Canada. The role of contracted resources for example, which is seen by some nations as an intrinsic part of their operational support, should be considered by Canada as such as well, to address not only short-term needs but also long-term requirements and doctrine. This would require a complete shift in the CAF's doctrine, abandoning the long-standing requirement for its operational support to be self-sufficient. However, it could also be seen as an opportunity to realign the CAF's doctrine with the will of the government of Canada to grow the Canadian economy by augmenting the involvement of Canadian industry in defence activities. As it stands, the industry may not be able to provide this service, but this can be rectified if the CAF's demand was more consistent. As demonstrated in the previous chapter, Canada does not have to be at the leading edge of this trend with the UK well ahead of the curb, and Australia and the US moving down the same path; it remains that there are many lessons to be learned from those closed allies. The CAF's model does not have to mirror theirs either, but rather must work for the geopolitical inspirations of the government and be aligned with their broad strategic objectives at home and abroad.

Furthermore, the same concept of support may be used to enhance the CAF's presence in the Arctic. Although the environment and diplomatic realities are quite different from other theatres of operations, the implementation of the recommendations listed above can also apply to domestic operations. Tremendous potential can be gained

from partnerships with industry, a greater continuous presence in the region and a holistic approach to support amongst the various government agencies operating in this environment will enable the CAF to operate sustainably in this environment.

Once again, none of these recommendations can be implemented in isolation. The complexity of operational support must be looked at widely, through a lens of sustainability, flexibility, cooperation and responsiveness. Only then can a solution be implemented that will give the CAF the backbone it requires to not only be successful in supporting future operation but become a significant enabler in the government's ability to deliver strategic foreign policy objectives across the globe.

Further research on an optimized structure for operational support and management of resources could benefit the CAF. The CAF must go through an honest and holistic revision of its capabilities and have a clear strategy on how to implement it going forward. It can be expected that the on-going work by the Vice Chief of Defence Staff, specifically the Chief of Force Development team on the CAF force mix and structure design, may be a step in the right direction. Aligning the resources with the core tasks expected by the CAF and addressing the gaps or risks through other means will be necessary to establish a sustainable concept of support that will meet the needs of tomorrow.

Overall, the CAF is in a good position to work with the whole-of-government in establishing a concept of support that meets the CAF's demand for support but also takes into considerations the potential for assistance by a greater and more continuous partnerships with both our allies and the private sector as well as the efficiencies that can be gained through a reorganization of the management of resources. The CAF needs a

stable and flexible operational support framework going forward that will not be the limiting factor to the government of Canada's ambition for its military, but rather a key enabler for it.

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