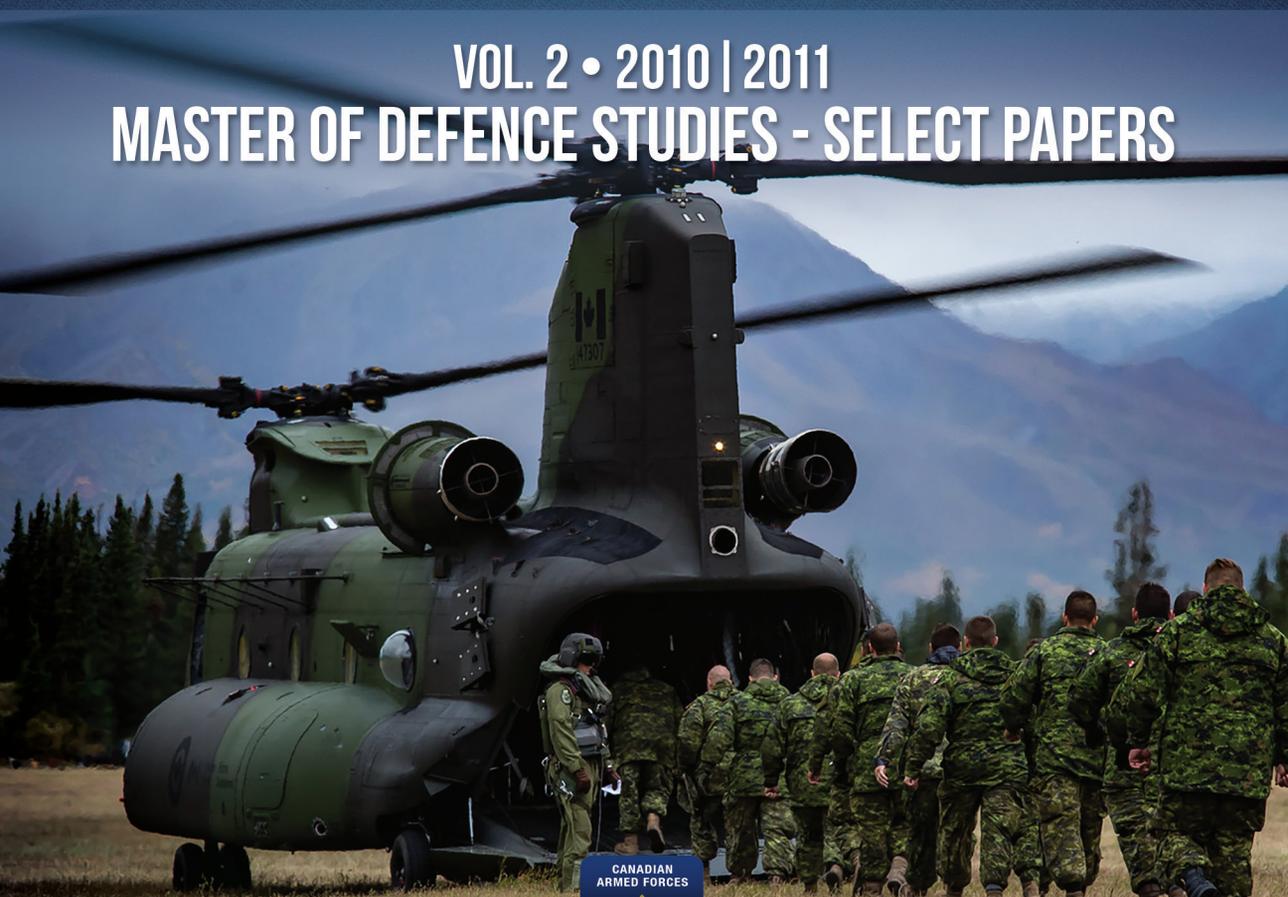


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Introduction

The Curtis Papers are named in honour of Air Marshal Wilfred Austin “Wilf” Curtis, Officer of the Order of Canada (OC), Companion of the Order of the Bath (CB), Commander of the Order of the British Empire (CBE), Distinguished Service Cross (DSC) and Bar, Efficiency Decoration (ED) and Canadian Forces Decoration (CD). Curtis was the Chief of the Air Staff of the Royal Canadian Air Force (RCAF) from 1947 until 1953 and was a strong supporter of the Canadian Forces College (CFC) in its early years as the RCAF Staff College. He firmly believed in the need for a well-trained and educated officer corps as a prerequisite for an efficient, effective and innovative military force.

The publication of *The Curtis Papers* supports the ongoing mandate of the Canadian Forces Aerospace Warfare Centre (CFAWC) to encourage the study of aerospace subjects of interest to both the RCAF and the joint defence community. One of the primary methods to achieve this goal is to publish, or to cause to have published, aerospace and joint material of a high professional and academic quality. The CFC, through its Master of Defence Studies (MDS) programme, produces on an annual basis a number of papers that meet these criteria. The papers contained herein were selected from amongst a multitude of fine papers produced by the students of the Joint Command and Staff Programme.

The Curtis Papers will be distributed to various Canadian and allied locations to serve as a resource for ongoing professional development and academic education. In this manner, they will increase aerospace awareness amongst broader civilian and military communities, while at the same time emphasizing the need for a joint perspective within aerospace forces.

Abbreviations

CFC	Canadian Forces College
RCAF	Royal Canadian Air Force

Editor’s Note

These papers were written by students attending the Canadian Forces College in fulfilment of one of the requirements of their course of studies. The papers are scholastic documents, and thus contain facts and opinions, which the authors alone considered appropriate and correct for the subjects. They do not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence.

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Chapter 1 – Narrative and Counter-narrative in Influence Activities

Lieutenant-Colonel Sanchez F. King

Abstract

Narratives are more than simply stories told by individuals and organizations. They can be used to attract people to a cause and motivate followers. They can be used to influence populations and convey messages in ways that have great impact on the target audience. Military commanders and influence-activities practitioners are confronted with narratives on a daily basis and must understand their power and how to counter dangerous narratives. This is an essential skill in the contemporary operating environment where an increasing amount of military activity is focused on information operations and strategic communication. This study examines the concepts of narrative and counter-narrative within a military context. Starting with the doctrinal basis for narrative and counter-narrative work, the paper then goes on to look at the psychological and literary theories underpinning narrative. Culture as well as symbols, metaphors, myths and media are all important elements of narratives and are also examined. This paper will also look at the analysis of narratives, including a recommended narrative analysis model, as well as conduct a brief survey of counter-narrative strategies. Finally, a case study of the Taliban and narrative is included.

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1. Introduction

In the spring of 1996, Muhammad Omar, better known as Mullah Omar, came into the presence of the Cloak of the Prophet. It was a critical moment in the history of the Taliban movement. At that point, the Taliban had yet to solidify their hold on power, and the fall of Kabul was months away. Under the leadership of Omar, a small group of religious students had ridden a wave of support, fuelled by frustration with lawlessness, into an unlikely position of power.¹

Mullah Omar came from a small village near Kandahar City and went on to study Islam in a Saudi-sponsored Pakistan madrasa. Though he never completed his Islamic studies, he apparently still refers to himself as a “Talib” or religious student, and this fact has not prevented him from becoming a dedicated, fundamentalist leader. Allegedly, Omar leads the Taliban based on direction from Allah delivered in dreams and visions. It is not surprising that such an individual would be drawn to an object such as the Cloak of the Prophet.²

Held in a special shrine in the centre of Kandahar, the Cloak of the Prophet is an object of tremendous reverence in Islam. The cloak is believed to have been given by God to the Prophet Muhammad. It was brought to Kandahar in 1768 by Ahmad Shah Durrani, the father of modern Afghanistan. When displayed, it is said that the cloak can end disasters and cure diseases. It was displayed twice in the 20th century to end cholera and drought. It has also been used for reasons of politics and power.³ When Mullah Omar gained access to the cloak, its influence was well understood by the Taliban leader.

On that spring day in 1996, Omar ignored the protests of the guardians and removed the Cloak of the Prophet, taking it to the rooftop of a nearby mosque. There he displayed the cloak, even at one point “wearing” it. The gathered crowd, alerted to Omar’s appearance by radio announcements, cheered, and the cry of *amir al-mūmineen*, “commander of the faithful,” was heard. It was here where Mullah Omar accepted the title held by the successors of the Prophet, one not used by Muslims for 1,000 years.⁴

This act was a dangerous gambit for Omar. Had the people balked at this audacious move, his Taliban movement may have floundered. As it turned out, he was able to solidify his power and gain the momentum he needed to take Kabul. By using such a powerful symbol—the cloak—and declaring himself *amir al-mūmineen*, Omar was at once connecting himself directly to the Prophet Muhammad and to the revered King Ahmad Shah Durrani. By extension, Omar was drawing from two very strong sets of narratives: Islam and the Pashtun legends surrounding Ahmad Shah. Thus, one act can communicate myriad messages—though stories, symbolism and metaphors. This is the power of narrative.

Within the complex, asymmetric security environment in which the Canadian Forces (CF) operate, commanders and influence-activity (IA) practitioners are confronted by narratives on a daily basis. These narratives are the stories that encapsulate the aims, ideologies and methods used by organizations—friendly, neutral and hostile—to operate, attract recruits and influence populations. Indeed, stories are a fundamental aspect of terrorist organizations and other violent non-state actors. It is argued in Canadian doctrine, and by scholars, that understanding narratives is critical to understanding these groups and their threat to security. Further, it is important to understand one’s own narratives so as to defend against adversaries who are savvy to the concepts of counter-narrative.⁵ This study argues that although current Canadian and allied doctrine, in particular counter-insurgency doctrine, identify the importance of narrative to military activities and assign the crafting of counter-narratives to the IA discipline, little practical guidance for understanding narratives and developing counter-narratives is found in them.

The aim of this study is to examine the role of narrative in military activities; it will focus on the concepts and theories behind narrative structures, analyse narratives and present models for developing counter-narratives. This study will also propose specific counter-narrative tools for use by IA planners. The study of narratives and counter-narratives is a cross-disciplinary effort in which “the range of voices is sometimes so wide that it is difficult to know whether they are all involved in the same discussion at all.”⁶ The disciplines of psychology, philosophy, literary studies, mythology, religious studies and communications theory all form part of the discussion and would, in other circumstances, merit individual research efforts. While this study will explore these foundational elements of narrative theory, it is necessarily limited in scope and depth.

2. Narrative and counter-narrative in doctrine

What is narrative and how does narrative fit into the arena of military activity? Simply put, a narrative is a story, and stories are one of the most important methods of communication between human beings. Journalist Robert Fulford described the story as the most versatile and, yet, most dangerous method of communication.⁷ The potential danger comes from the power of stories to connect people and events across time and distance as well as the power of the narrative form to influence audiences. First, we need to examine the military context of narrative.

Dr. Michael Vlahos, a senior researcher at John Hopkins University, wrote that: “In war, narrative is much more than just a story. ‘Narrative’ may sound like a fancy literary word, but it is actually the foundation of all strategy, upon which all else—policy, rhetoric and action—is built.”⁸ Vlahos sees war narratives as achieving three things. First, they provide a people-friendly foundation and framework for policy. Second, they provide existential “truths” which are hard to critique. Third, they provide the “talking points” for those who argue for and work to “sell” the war narrative.⁹ In his *Strategic Communications: A Primer*, Royal Navy officer and academic Steven Tatham agreed with Vlahos as to the purpose of war narratives, summarizing that “Narratives are the foundation of all strategy.”¹⁰ Tatham further suggested that “narratives should provide structure and relevance to the meaning of a particular situation.”¹¹

The current United States (US) Army and United States Marine Corps (USMC) counter-insurgency manual describes narrative as “[t]he central mechanism, expressed in story form, through which ideologies are expressed and absorbed.”¹² Further, the manual notes that a narrative is “a story recounted in the form of a causally linked set of events that explains an event in a group’s history and expresses the values, character, or self-identity of the group.”¹³ Noted counter-insurgency expert Dr. David Kilcullen describes a narrative as “a simple, unifying, easily expressed story or explanation that organizes people’s experience and provides a framework for understanding events.”¹⁴ Common then, among these descriptions of narrative, are the elements of values and ideals. Narratives, which are presented in the story form, provide frameworks and links to events and to others. Given the psychological nature of this process, a quick look into the psychological elements of military activity is required.

Military thinkers and soldiers alike understand that the military domain has both a physical and psychological dimension. As Sun Tzu, the source of much ancient military wisdom suggests, “the skillful leader subdues the enemy’s troops without any fighting.”¹⁵ To be able to defeat an opponent without resorting to use of physical force is, therefore, preferred as a military stratagem.

The psychological (sometimes called the moral) and physical planes are directly connected and interrelated. Military forces possess capabilities which can produce effects on both the psychological and physical planes. Combat operations, such as a deliberate attack, will result in physical effects on a target such as the destruction of vehicles and weapons systems and, thus, a reduction in the physical capabilities of the opposing force. This reduction in capability is described as a first-order effect on the physical plane. Similarly, psychological operations—such as radio broadcasts or leaflet drops—will produce psychological effects on the perception, understanding and, ultimately, the will of the adversary. The result would be a first-order effect¹⁶ on the psychological plane. First-order effects on both the physical and psychological planes are intended to change the behaviour of a target group, and it should be understood that activities on both planes will have second-order effects on the other plane. Thus, leaflet drops reduce military capability through desertion, and physical destruction affects the soldier's will to fight.

In the CF, the military capabilities designed to produce first-order effects on the psychological plane are grouped as influence activities, a doctrinal subset of information operations (info ops).¹⁷ *Land Operations* defines IA as “any activity for which the primary purpose is to influence the understanding, perception and will of the target audience, be it friendly or hostile.”¹⁸ IA specialists are focused on the psychological plane and the interconnections with the physical. To work in this field, they need tools and doctrine.

The next step in this examination is to survey existing doctrine for the concepts of narrative and counter-narrative. We will briefly look at Canadian, selected allied and North Atlantic Treaty Organization (NATO) doctrine.

Canadian doctrine

Within Canadian doctrine, the concepts of narrative and counter-narrative are largely found in the disciplines of info ops, counter-insurgency (COIN) and psychological operations (PSYOPS). In terms of Land Force info ops doctrine, the previous manual has been replaced by B-GL-300-001/FP-001, *Land Operations*. Section 9 in Chapter 5 discusses info ops, IA and the psychological plane, a description of which is found above. References to info ops are found throughout the document, but specific reference to narrative is found only in the discussions surrounding centres of gravity (CG), in particular the concept of moral CGs. The doctrine describes this concept as follows:

A moral [CG] in many campaigns may be the will of the majority of a population, or the will of a particular segment of the population. Such will be the case in a COIN campaign. The key battle between the insurgent and the campaigning forces will be to win the enduring support of the populace.¹⁹

A moral CG is connected to people, individuals and organizations, which create and maintain will. Ideas, while not CGs in and of themselves, create influence among the populations, and therefore, “this is the aim ... of the narrative formed by insurgent forces.”²⁰ It is in Canadian COIN doctrine that narrative gets some measure of discussion.

Narrative—along with a suitable cause, leadership, popular support as well as organization and actors—is identified as one of the five elements, or basic tenets, of an insurgency.²¹ As seen elsewhere, Canadian COIN doctrine emphasizes that narrative provides the tools for insurgencies to recruit members, justify insurgent actions and undermine the credibility of the national government. “At the basis of an insurgency,” stresses the doctrine, “is a narrative that contains an idea and founding cause for the insurgency.”²² It also notes that, in addition to insurgent groups, narrative is used by terrorist

groups, governments, cultural groups, religions and even individuals. This is important not only in the effort to craft counter-narratives but also in light of the importance of counter-insurgency forces in supporting their own narrative. Canadian COIN doctrine discusses the concept of propaganda. It is used in the pejorative sense and contrasts propaganda with information by suggesting that information is always truthful, whereas propaganda is likely to contain some untruths. While it is clear that Canadian COIN doctrine places considerable importance on understanding and countering insurgent narratives, the “how to” is limited, being summed up as follows:

Information operations (influence activities) must work to counter the insurgent narrative and its supporting propaganda. Countering the narrative will require the symbiotic use of words and deeds that seek to redress the grievances exploited by the insurgent narrative while promoting the desired narrative of the host-nation government and coalition.²³

The other key piece of Canadian doctrine related to narrative is *Psychological Operations*. Canadian doctrine, borrowing directly from NATO doctrine, defines PSYOPS as:

Planned psychological activities using methods of communications and other means directed to approved audiences in order to influence perceptions, attitudes and behaviour, affecting the achievement of political and military objectives.²⁴

PSYOPS is a key component of influence activities and, logically, should be concerned with narratives and counter-narratives. Narratives give the context and language to craft themes and messages and to plan activities to counter the narratives of other actors. Strangely, Canadian PSYOPS doctrine does not mention narrative once. The doctrine does have a limited discussion of what is described as “counter psychological operations,” which are activities designed to protect friendly audiences from hostile messages, reduce the adversary’s prestige—real or imagined—and inform the target audience of the Canadian Forces’ intentions. The focus of the doctrine is the analysis of propaganda and of target audiences, which will be looked at in greater detail in Section 5.²⁵

Allied doctrine

The US military certainly recognized the important role played by narrative. The US Army’s *Joint Operating Environment 2010* describes a so-called battle of the narratives, stating that “the battle of narratives must involve a sophisticated understanding of the enemy and how he will attempt to influence the perceptions not only of his followers, but the global community.”²⁶ Current US Army and USMC COIN doctrine, the work of Generals David Petraeus and James Mattis, describes five overarching requirements for a successful COIN operation. One of these five is the conduct of info ops, and it includes the requirement to “discredit insurgent propaganda and provide a more compelling alternative to the insurgent ideology and narrative.”²⁷ Elsewhere in the doctrine, Petraeus and Mattis discuss culture and cultural forms such as rituals, myths and symbols. Each of these forms can constitute a medium for communications. These communications, in turn, influence thought and behaviour, spread ideologies and mobilize populations. “The most important cultural form for counterinsurgents to understand” write the authors “is the narrative.”²⁸ Insurgents will frequently try to tap into local history and myths to exploit local narrative for their own purposes. Counter-insurgents are encouraged to develop an alternative narrative, or “an even better approach is tapping into an existing narrative that excludes insurgents.”²⁹ Petraeus and Mattis describe the importance of understanding the local culture and getting to know what motivates the local population in an effort to shape an effective counter-narrative to that of the insurgency. The creation and use of counter-narratives, they conclude, is “art, not science.”³⁰

In terms of British doctrine, narrative does get some mention. In *Operations in the Land Environment*, the concept of narrative is briefly explored with a focus on the importance of a British narrative to the British forces. Adversaries exploit narratives and have become expert at using new technologies. The doctrine goes on to suggest that the battle of narratives is equally important as other aspects of a campaign. “The strategic narrative,” it states, “sets the scene for expressions of intent and main effort, providing the benchmark against which tactical actions are tested.”³¹ A friendly strategic narrative helps to unify tactical action with a campaign plan by giving subordinate commanders and soldiers tools to integrate military action and other elements of power, such as diplomacy and economics; therefore, narrative is central to influence activities.³² Discussions of narrative and counter-narrative are not found in United Kingdom (UK) info ops or PSYOPS doctrine.

While not formal doctrine, Tatham’s *Strategic Communications* looks at narrative and counter-narrative, declaring that “narratives are the foundation of all strategy.”³³ In addition to stressing that narratives unite the actions of organization, he also points out that narratives, to be successful, need to be flexible so that they can respond effectively to changing events. The crafting of counter-narratives, Tatham assesses, is difficult, and such counter-narratives need to be based on a thorough analysis of the adversary’s narratives, culture and history. He sums up by declaring that understanding an adversary’s narrative is “an extremely challenging area of campaign planning.”³⁴

The somewhat limited discussion of narrative within NATO doctrine is embedded in the concept of strategic communication. The focus for NATO appears to be the relevancy and currency of the existing NATO narrative. The priorities are updating the NATO story and efforts to get partners to adapt and use this story at all levels.³⁵ Other writing on this topic reinforces the need for consistency and credibility of a NATO narrative. Further, this narrative must be harmonized across NATO members and partners to be effective in the “battle of narratives.”³⁶ NATO info ops and PSYOPS doctrine does not mention narrative and counter-narrative.

A brief survey of Canadian and select allied doctrine has revealed that there is an increasing level of importance placed on the concept of narrative. At the strategic level, the doctrinal focus on narrative is found in an appreciation of the importance of one’s own narrative in unifying collective efforts. In terms of operational and tactical discussions of narrative and counter-narrative, these are solidly embedded in counter-insurgency doctrine. While the importance of counter-narrative work is stressed, a reoccurring theme in the documents is one of caution. It is seen as a dangerous path, fraught with cultural landmines. Beyond this, there is little practical guidance.

3. Why narratives work: Psychology and folktales

Psychology of narratives

Why do narratives have the power to influence audiences? Much of the reason is due to human psychology. Some research suggests that human cognition is based on analogy and metaphor. Further evidence shows that stories aid in recall, change emotional states and motivate individuals.³⁷ Literary theorist Teun van Dijk argues that narrative structures have a psychological reality because they correspond to the model of cognitive information processing.³⁸ Several studies indicate that the human mind deals with information, both in terms of storage and recall, using schema. Schemas are templates that allow for easy storage and recall by comparing ideas to like ideas. They consist of “pre-recorded” information made up of concepts or categories of concepts which are available to the listener. These schema are accessed when one is told “A is like B,” and in knowing characteristics of

B, one quickly gets the idea of A. Schemas can be stretched to unfamiliar territory to help introduce new ideas and concepts.³⁹ Narratives using schema are constructed in a similar fashion to the human cognition and, thus, allow for a quick and efficient exchange of concepts.⁴⁰ Perhaps a perfect example of this at work is the proverb. Proverbs are short, simple sayings that have a core piece of wisdom. Polished over time to be very functional, proverbs are easy to remember and have near universal appeal. They are a useful template when looking at crafting messages.⁴¹

In terms of influence psychology, stories work largely due to the concepts of commitment and consistency. Psychologist Robert Cialdini notes that “[o]nce we make a choice or take a stand, we will encounter personal and interpersonal pressure to behave consistently with that commitment.”⁴² [emphasis in original] By retelling a story and especially by putting it in writing, the individual establishes a commitment to the ideas within the narrative. The desire to remain consistent with a commitment can last a long time and can override somewhat more logical behaviour.⁴³

Other lines of research shed light on how the brain is affected by stories. Memetics is the study of how ideas (memes) spread through populations, not unlike the spread of a virus, and how new ideas can replace old ones.⁴⁴ According to Andrew Sullivan, who has been studying memetics, memes are primarily spread through word-of-mouth pathways. Memes can explain a wide range of social learning phenomena, the most prominent of which is the spread of religious ideas. Sullivan articulates four stages of a successful meme. The first is the assimilation and internalization by the host. Second, the meme is embedded in the memory of the host for future use. Third, the meme is exposed to others, likely through verbal or behavioural expressions. Finally, the meme is transmitted to a new host and the cycle is complete.⁴⁵ Sullivan argues that memetics is a powerful new tool in the counter-terror efforts against al-Qaeda, the Taliban and other similar groups who spread extremist ideas in this manner.⁴⁶ More about how ideas stick will be discussed later in this section when we look at narrative structures.

Framing

Framing is an important element of communication, as it helps individuals understand and interpret events and the world around them. Frames form the bridges between individuals and the socio-cultural context, thus between cognition and culture.⁴⁷ Frames borrow meaning from symbols and metaphors and, significantly, from narratives. Once an issue is framed, narratives and messages have a context. To illustrate using a military context, framing a conflict as an “insurgency” versus a “civil war” orients an audience in a certain direction and military doctrine.⁴⁸ The “war on terrorism” is an example of a frame designed to mobilize efforts against certain non-state actors. The frame was careful to avoid declaring war on someone of some organization, as there was a fear that such a declaration would give these organizations legitimacy. Further, labelling terrorism as a criminal activity also denies legitimacy. Vlahos points out that such framing can, in fact, obscure the true intent of the actors and can lead to narratives misaligned within a frame. The attack on the United States Ship *Cole* was labelled by the US government as a terrorist attack, but it would appear to be a legitimate military target through a different frame.⁴⁹

To be useful, a frame must resonate with its audience. Simply put, if an audience member does not understand the frame, or it does not connect to previous beliefs or culture, then it can fail. Frames can be adjusted or realigned so as to become more effective or to react to counter-narratives developed by opposing groups.⁵⁰

Meta-narratives

Meta-narratives, or master narratives as they are often called, are a type of frame which provides a context for narratives. “A master narrative is a dwelling place,” writes Fulford, “we are intended to live in it.”⁵¹ A meta-narrative is an attempt to explain a wide variety of things, if not everything, with a single theory. Religions present master narratives, such as those found in the Bible and the Qur’an. It is a meta-narrative that is used by Osama bin Laden and al-Qaeda, one nestled with the Islamic master narrative.⁵² Historians such as Edward Gibbon, H. G. Wells and Alan Toynbee each attempted to explain human history in a way that lessons could be drawn for the future. Perhaps the most notable meta-narrative impacting the 20th century is that of Karl Marx. He attempted to explain all of history and present a model of future behaviour which still resonates in the 21st century.⁵³

The use of meta-narratives is widespread, as “each society develops a master narrative to which it frequently refers, particularly in moments of crisis.”⁵⁴ They are often used by politicians in an attempt to support military actions. Former US President George W. Bush’s “axis of evil” narrative is a noteworthy example. By describing Iraq, Iran and North Korea as the axis of evil, President Bush drew a direct comparison between these states and the “axis” powers of World War II. He further tapped into the powerful narrative of the Second World War as a “good war” and a noble endeavour, which is strong in American consciousness.⁵⁵

The utility and trustworthiness of meta-narratives has come under fire in recent years. The chief flaw of meta-narratives is that they tend to focus on a few central concepts or figures to the exclusion of less prominent ones. Fulford illustrates this point by noting the decline in credibility of Gibbon’s work on the Roman Empire and the virtual abandonment of the “Christopher Columbus discovery of America” narrative around 1992.⁵⁶ The primary academic criticism centres on the tendency of meta-narratives to “treat facts as props,”⁵⁷ which can lead to misinterpretation, be it intentional or not.

When attempting to understand any given narrative, it is vital to identify what meta-narrative or meta-narratives are at play. In understanding the meta-narrative, one can potentially get to the context and to elements of the narrative that connect to the audience. Care must be taken so as not to become over reliant on meta-narratives to decode narratives, but it is essential to the crafting of counter-narratives.

Narrative structures

What makes up a story? In their work on counter-narrative strategy, William Casebeer and James Russell suggest that there are no common definitions of what a story is. The “post-modernist” school of literary criticism, they note, is based on the concept that there is no set model for a “story.” They do go on to argue that even in a post-modernist view, the concept of “story,” similar to the concept of “game,” has value.⁵⁸ Literary theorist Patrick Colm Hogan also acknowledges the contemporary arguments against a universal theory. He does, however, counter these arguments with precisely that—a universal literary theory.⁵⁹ Hogan suggests that most features of stories are universal, particularly the use of symbolism and imagery. He describes certain universal techniques or schemata, such as poetry and the verbal art.⁶⁰

As a basic model of narrative structure, Casebeer and Russell turn to the work of 19th century theorist Gustav Freytag. In their study, they examine the “Freytag Triangle” which simply is based on a beginning, middle and end. A story will have complications and rising action, a climax or crisis, and falling action toward the end.⁶¹ This has become a standard model. Van Dijk uses the same model, but notes that there can be flexibility in aspects of it; he sees the introduction or complication as

usually having several developing events requiring actions by various agents. These events will be of either a major or minor nature—the assessment of each being based on the consequence of failure to the agent. In a more complex narrative, further events with their associated consequences may arise and be dealt with. The consequence represents the climax of the story that is the point when the agent reaps the reward or avoids a negative effect. At the end, Van Dijk describes an evaluation. This is an assessment of the events by the narrator or agent and possibly takes the form of a moral.⁶² This “triangular” model is simple and useful for basic analysis. There are some more complex models.

One of the more famous models is the one developed by the Russian Formalist Vladimir Propp. He studied Russian folk tales in an effort to find a universal structure and characters. After much research, he observed that within these traditional stories the functions of characters were constant, that the number of functions in a tale was limited and that the sequence of these functions was always the same.⁶³ Propp ultimately concluded that “all fairy tales are of one type in regard to their structure”⁶⁴

To appreciate this approach, a quick look at Propp’s work is necessary. Propp proposed that there were 31 distinct functions (see Table 1) in every tale. While he insisted that the sequence needed to be the same, he acknowledged that many of the functions could be combined.⁶⁵

Ser	Function
1.	One of the members of a family absents himself from home.
2.	An interdiction is addressed to the hero.
3.	The interdiction is violated.
4.	The villain makes an attempt at reconnaissance.
5.	The villain receives information about his victim.
6.	The villain attempts to deceive his victim by using persuasion, magic or deception.
7.	The victim submits to deception and thereby unwittingly helps his enemy.
8.	The villain causes harm or injury to a member of a family.
8a.	One member of a family either lacks something or desires to have something.
9.	Misfortune or lack is made known: the hero is approached with a request or command; he is allowed to go or he is dispatched.
10.	The seeker (hero) agrees to or decides upon counteractions.
11.	The hero leaves home.
12.	The hero is tested, interrogated, attacked, etc. which prepares the way for his receiving either a magical agent or helper.
13.	The hero reacts to the actions of the future donor.
14.	The hero acquires the use of a magical agent.
15.	The hero is transferred, delivered or led to the whereabouts of an object of search.
16.	The hero and villain join in direct combat.
17.	The hero is branded.
18.	The villain is defeated.
19.	The initial misfortune or lack is liquidated.

Ser	Function
20.	The hero returns.
21.	The hero is pursued.
22.	The hero is rescued from pursuit.
23.	The hero, unrecognized, arrives home or in another country.
24.	A false hero presents unfounded claims.
25.	A difficult task is proposed to the hero.
26.	The task is resolved or accomplished.
27.	The hero is recognized, often by a mark or an object.
28.	The false hero or villain is exposed and/or punished.
29.	The hero is given a new appearance.
30.	The villain is pursued.
31.	The hero is married and ascends the throne.

Table 1. Propp’s 31 functions of a folk tale

Propp’s functions can be aligned with the triangle models of Freytag and Van Dijk. The functions can be allocated to introduction, complications, consequence and evaluation, as dictated by the individual narrative. Propp also examined the characters in folk tales and established that there are seven set roles. Like the functions above, several roles (see Table 2) can be combined into one character. Further, a single role may be taken on by several different characters.⁶⁶

Role	Description
Villain	Struggles with the hero.
Donor	Prepares and/or provides hero with magical agent.
Helper	Assists, rescues, solves and/or transfigures the hero.
Princess	A sought-for person (and/or her father), who exists as goal and often recognizes and marries hero and/or punishes villain.
Dispatcher	Sends the hero off.
Hero	Departs on a search, reacts to the donor and weds at end.
False Hero	Claims to be the hero, often seeking and reacting like a real hero.

Table 2. Propp’s seven roles of a folk tale

These characters or character groups can be found in most narrative forms and across time. The modern character of James Bond, for example, can easily be compared to Beowulf. Although the style is different, each represents male fertility and a hero who saves humanity from disaster.⁶⁷ While Propp’s work is rooted in the Russian tradition, there is evidence that his theories are applicable in other cultures, including African and North American native stories. Further, the 31 functions appear to connect to the structure of the epic, including the *Odyssey*.⁶⁸

Theorist James Wertsch argues that modern states have engaged in significant efforts to create collective memories by using tools, such as providing official accounts of history, and controlling the ways

that the accounts are used. To illustrate this, Wertsch looked at a key narrative from Soviet and post-Soviet Russia—specifically those of the Great Patriotic War. The study he cites suggests that those individuals who were products of the Soviet education system employed an episodic or time-based schematic narrative template, one used in the Soviet-era textbooks. Individuals educated in the post-Soviet era appeared to fall back on older models of schematic narrative templates, very much like those explored by Propp.⁶⁹

More contemporary work has looked at the issue of narrative structure and its effect on understanding and influence. In 1999, an Israeli study looked at the most effective advertisements to see if there were common templates. These templates, termed *creativity templates*, were studied in part to see if they could be used by untrained subjects to create effective ads. In their study, the researchers identified six general templates⁷⁰ (see Table 3) with 16 variations. The authors of this study caution that these templates may change over longer periods of time, as they are subject to shifts in ideas and social norms.⁷¹ Culture plays a key role.

Template	Description
Pictorial analogy	A symbol, or its replacement, is introduced and discussed.
Extreme situations	An unrealistic situation, designed to enhance the qualities of a product (or person), is created.
Consequences	Demonstrates the implications of doing or failing to do what is advocated.
Competition	One product (person or idea) competes against another.
Interactive experiment	The audience is invited to engage in an experiment—real or imagined.
Dimensionality alteration	The “product” is manipulated in relationship to its environment.

Table 3. Six general creativity templates

In a similar vein, Chip and Dan Heath studied inspirational stories, ones that appeared to have the most impact and that left a longer impression on readers. The results led them to conclude that there were three essential story templates. These are the challenge plot, the connection plot and the creativity plot. In the challenge plot, a protagonist overcomes an obstacle to succeed. There are many examples of this type of story, including most Hollywood blockbusters. The connection plot is about people building relationship, usually in spite of barriers and gaps. The Heath brothers cite *Romeo and Juliet* as a classic example of this plot type. Finally, in the creativity plot someone makes a breakthrough or solves a problem in an innovative way. In some ways, this is about mental versus physical challenges.⁷²

There are other models of narrative structure, but there are enough universal qualities that an analyst studying narrative can begin to compare templates, schemas and characters. As Wertsch comments, “the narratives we use to make sense of human action are coming from a ‘stock of stories’ from which any particular individual may draw.”⁷³

There are obstacles to applying a universal template. Culture is a significant filter through which a narrative can be “brought to life” if individuals share a culture; on the other hand, a narrative can be incomprehensible to those outside a given culture. Metaphor and symbols, and even the type of medium through which a story is told, are often unique to a region or people. The next section will examine the impact of culture, metaphors, myths and media pathways on the narrative.

4. Culture, metaphors, myths and media pathways

Narratives are not created, communicated and understood in a vacuum. As Arthur Frank observed, “it seems inescapable that any stories will be told in the conventional rhetoric of a cultural context.”⁷⁴ That cultural context is critical to the analysis of any narrative.

Culture

Culture is a concept which is notoriously difficult to define. Described as “spongy,” the complex web of relationships, hierarchies, history and language that make up culture can be bewildering to military commanders and staff. Historically, some military commanders have been successful at understanding culture and using it to their advantage. T. E. Lawrence, or “Lawrence of Arabia,” was highly successful at using his detailed understanding of Arabic culture to influence Prince Feisal. As a result, he was able to build relationships that were used to leverage tactical successes.⁷⁵ Culture has become a critical dimension of the contemporary operating environment, and the need to understand it has become vital to senior military leaders.⁷⁶ The USMC has a long history of unconventional military activities, often working among what they would describe as foreign populations and cultures. This fact has shaped the USMC so that, as a warfighting institution, there is a significant appreciation for the role that culture plays in their operational activities. In 1940, the authors of the *Small Wars Manual* attempted to capture a century of Marine Corps experience, including the cultural dynamics. They observed that “human reactions cannot be reduced to an exact science, but there are certain principles which should guide our conduct.”⁷⁷ The critical importance of culture to military operations is still well known to the USMC, which recently published a guide to culture for its members. In this text, much effort is spent discussing the definitions of, and challenges in defining, culture. In the end, the definition that the USMC chooses for culture is “the shared world view and social structures of a group of people that influence a person’s and a group’s actions and choices.”⁷⁸

Given the importance of understanding culture, considerable effort has been made to assist organizations to navigate in this cultural environment. A key concept used in this effort is that of cultural intelligence, or “CQ” as it is known. CQ is “the ability to recognize the shared beliefs, values, attitudes and behaviours of a group of people and ... to apply that knowledge to a specific goal.”⁷⁹ An exploration of this model is warranted, as it leads itself to an analytical approach.

Dr. Bill Bentley of Canadian Forces Leadership Institute advocates looking at culture as a system. He observes that “culture is an integral part of any human activity system, be it a civilization, a nation, any organized social or political community,” adding that “these systems are non-linear and must be conceived holistically.”⁸⁰ Bentley describes culture as a complex and non-linear system. Such a system is characterized by the fact that inputs can have disproportionate effects to their relative size. This, in contrast to a linear system, is one in which inputs have more proportional effects. Systems like cultural systems are sometimes called complex adaptive systems.⁸¹ The work of well-known cultural theorist Geert Hofstede is in agreement, as he defined culture as “collective mental programming of the people in an environment.”⁸²

Society and culture form an intertwined web, each with its key elements. Society can be defined as a “population whose members are subject to the same political authority, occupy a common territory, have a common culture and share a sense of identity”⁸³ In some senses, society is the “hardware” of the system. Culture, in turn, is the “software.” Without this software, narratives lack meaningful context.

The analysis of culture is important to narrative work, and the social structure within a society provides a good starting point for analysis. Brent Beardsley and Karen Davis suggest that the first step is to identify what groups (religious, tribal, racial, etc.) are present and then examine how these groups interact or relate. Next, they look to institutions, described as the building blocks of society. Many institutions, such as schools or communications institutions like the media, may be linked to a specific group, but others cut across society and group boundaries. Finally, in the view of Beardsley and Davis, the roles and status of individuals must be examined, both to understand the potential audiences and to guide the interactions between CF personnel and the local populations.⁸⁴

Once the social structure is understood, at least to some degree, then the culture can be examined. Hofstede focused on four value dimensions in an effort to understand culture. These values are power distance, uncertainty avoidance, individualism versus collectivism, and masculinity.⁸⁵ For Beardsley and Davis, the first key to culture is identity and identity development, as it “provide[s] clues to how one makes meaning of the world around him/her, and thus how individuals and communities choose to engage with other individuals and communities.”⁸⁶ Understanding identity will lead to an insight into values, beliefs, attitudes and perceptions. A further key element of culture is that of language. Several theories of language and its role in culture have been developed, and while they do not always agree, it is clear that language is a significant factor.⁸⁷ The need to study the language goes beyond merely the technical aspects. Language forms “a broader system of communication including ... symbols, ‘body language,’ and patterns ... of activities ...”⁸⁸ Power, influence and small group dynamics, especially in an unstable context with military and various armed actors, form significant factors in a cultural analysis.⁸⁹ Power and authority, be it “coercive, social, economic, rational-legal based, charismatic or traditional authority,”⁹⁰ must be identified and mapped out. These relationships are critical for a proper analysis. Finally, in the view of Beardsley and Davis, the interests of the groups must be identified. Understanding the core motivation of all the actors in a society is important, and yet challenging, work. It can best be achieved through gathering and understanding the information listed above.⁹¹ These aspects, combined with the knowledge of group relationships, will provide a good cultural overlay for a military planner.

It is worth looking at the cultural analysis model discussed in British military doctrine. While in general, it corresponds to the above model, this doctrine has reduced the essence of it down to three basic questions, each in comparison to one’s own culture. First, what is similar? This looks for the common ground. Second, what is unfamiliar? This question speaks to the strangeness of a culture from the outsider’s perspective. Third, what is hidden? This looks at the foundations which lie at the heart of a culture.⁹²

To analyse a complex adaptive system like culture, Bentley suggests that the following elements be examined: “observed behavioural regularities when people interact, group norms, espoused values, formal philosophy, rules of the game, general feeling within the group (climate), embedded skills, habits of thinking – mental models, shared meanings, and ‘root metaphors’ or integrating symbols.”⁹³

For the authors of the USMC’s *Operational Culture for the Warfighter*, the study of culture for military purposes is best done by examining five dimensions. These dimensions are the physical environment, economy, social structure, political structure as well as beliefs and symbols. Broader than those of Beardsley and Davis and the CQ model, they are more tailored to a military planning process. Each of the dimensions is further broken down into detailed factors, such as the dynamics of ethnicity, issues of tribal membership⁹⁴ and issues surrounding informal economies.⁹⁵ Relevant to the discussion of narrative is the fifth dimension, belief systems. “In an operational culture sense,”

write the authors, “‘history’ is a tool at the disposal of actors in the present.”⁹⁶ History forms the basis for imagined memory, which are memories selectively chosen or influenced by beliefs. In a group setting, these memories form collective memories. History in the Islamic context, for example, permeates literature and is seen as key to everyday living.⁹⁷ In narrative analysis, these memories in various forms become essential.

Historical stories (and quasi-historical tales such as myths, legends and folklore) are important keys to revealing underlying cultural themes and beliefs. In simple terms, folklore is a group’s collection of stories, sayings, and narratives of history passed down through the generations. Each generation receives this inheritance, imbues it with new meaning, and adds new narratives based on new collective experiences.⁹⁸

The Marines evaluate these memories by looking at them in several ways. First, it is *memory as constructed*. This describes the situation where an event happens and then meaning and importance are added later. *Memory as ideological fabrication* is the creation of false events imbued with meaning. Finally, *the event evokes the memory and the meaning* describes events with multiple meanings for different audiences.⁹⁹ A similar model is espoused by academic Beatrice de Graaf. She describes these events as *signifiers* and the memory as *legend*. Signifiers can be a wide variety of things, ranging from historic or recent events to public policy or laws. The legend is then created around the signifier, thus linking meaning to the original. Legends can, of course, be distorted and reshaped to fit any agenda.¹⁰⁰

As discussed above, social structure is a key building block in the examination of culture. While there are several important elements of political and social structure, one in particular is worth a brief examination. The tribe is an enduring form of human communal structure. Salmoni and Holmes-Eber, writing for the USMC, espouse the concept that tribes have three elements. First, a tribe has a corporate identity, possibly based on a common ancestor (real or imagined). Second, there is a structuring principle within the tribe, linked to the corporate identity. This may involve issues of lineage and social status. Third, the tribe will have leaders and leadership, likely based on inherited power.¹⁰¹ In his RAND Corporation working paper, David Ronfeldt described the tribe as the “once and forever form.”¹⁰² He theorizes that there are four stages in the development of human society: tribal, institutional, market and network. The tribal form originated thousands of years ago but persists throughout the evolution of society. The institutional form was more hierarchical in nature and is illustrated by the Roman Empire and medieval church. The market form rose in the 18th century with the predominance of commercial competition. The network form, now becoming dominant, is about individuals and groups connecting directly. At its core, the network form is technology based.¹⁰³

Elements of tribalism are found in the most complex society, taking the form of things such as nationalist movements and sports fan clubs. Further, it is the “ultimate fallback form.”¹⁰⁴ When society is stressed and government institutions begin to fail to protect the people, society can quickly return to a tribal model. Tribalism is a common basis for insurgencies and civil wars, as is evidenced by the Tutsi and Hutu struggles in Rwanda.¹⁰⁵ Events in the former Yugoslavia during the civil wars of the 1990s certainly illustrate how a modern society can revert to an earlier form for protection.¹⁰⁶ Given an emergence of “extreme tribalism”¹⁰⁷ and the presence of tribalism in most cultures, an understanding of its dynamics and effects on communication will be necessary to analyse a culture or narrative.

Symbols and metaphors

Symbols can be powerful communication tools. Symbols are “something” and have a broader meaning that connects to something else. They can be objects, words or phrases, or even people and activities. The key is that the symbol must, for the audience, remind them of some other meaning. Symbols can help people deal with complex ideas, concepts or emotions. Symbols are rooted in culture, and therefore, the use of them requires detailed understanding of the “language” of the broader context.¹⁰⁸ Physical symbols can be virtually anything. Flags, banners and logos can all be obvious symbols of a group, but physical cultural symbols can include something as simple as a pile of rocks which could indicate a grave or shrine. Colours often have symbolic meaning, as can images of objects and creatures. Written language also constitutes a form of physical symbology. Both formal signage and graffiti can have meaning, including an expression of ownership, group membership or political allegiance.¹⁰⁹ Verbal and non-verbal symbols represent an important aspect of cross-cultural communication. Languages come in both formal and informal modes; therefore, dialects and slang can use symbols which may be unfamiliar to outsiders. Non-verbal communication consists of many aspects of body language, including hand and facial gestures. While some non-verbal symbols appear universal, such as smiling, many are unique to a given culture and even a specific location. For the cross-cultural communicator, an incredible array of diverse physical symbols awaits. Handshakes, eye contact, foot position and physical distance are all well-known variables. Care must be taken in learning to interpret these symbols and understanding that meaning can vary within groups.¹¹⁰

One form of a culturally charged symbol is the icon. An icon can be a physical object which may represent some aspect of religion or deity—be it good or bad in nature. Icons can also be in the form of a person. Such a person can be a hero or role model for a cultural group and can have significant influence. The mention of an iconic person can tap into shared memories and values. Understanding who the heroes and villains are within a culture is a critical activity in narrative analysis.¹¹¹

Metaphors are also an important factor when looking at a narrative. Metaphors are different from symbols but, very much like symbols, must be carefully interpreted so as not to be misread. This is especially true in the context of religion, where several layers of meaning may be present.¹¹² A metaphor is essentially “an image that suggests something else,”¹¹³ thus a description of something which is not literally true. The model for a metaphor is “*X is Y*” rather than “*X is like Y*.” Metaphors are found in virtually every culture and are, thus, “indigenous to all human learning, from the simplest to the most complex.”¹¹⁴ Context is critical to metaphors, be it in time (historic versus contemporary) or interpretation, i.e., religious tradition, social and cultural context.¹¹⁵ Metaphors can be “living” or “dead.” Living metaphors are newer to the language or culture and still retain the original sense of two connected ideas. Dead metaphors are ones which have been in use so long as to have become rooted in everyday language and, therefore, represent only one idea.¹¹⁶ The study of metaphors, and the need to understand them, has become an important topic for the US Government, who has tasked its Intelligence Advanced Research Project Activity to develop methods to better interpret metaphors in languages such as Spanish and Farsi. These methods and programmes will be used by intelligence agencies to better understand intercepted communications from terrorist and criminal groups.¹¹⁷

Myths

Myths are different from folk tales because they are linked to a specific time and place, whereas folk tales can be anywhere or any time. Joseph Campbell defines mythology as “an organization of symbolic images and narratives, metaphorical of the possibilities of human experience and the fulfillment of a given culture at a given time.”¹¹⁸ He goes on to describe what he sees as the four functions of myths. The first is the reconciliation of the mind to the universe—that is, the mystical

dimension of the human. The second is the explanation of the order of the cosmos. The third is a sociological function which serves to validate and support a social order. The final function is to guide the individual through the stages of life by teaching them how to react to events.¹¹⁹

Myths embody key aspects of culture which help group members understand their social surrounding, sense of justice, outlooks and superstition. In effect, myths help individuals understand what is “normal.”¹²⁰ Myths are frequently connected to a historic event, often a foundation event. Myths, in particular foundation myths of organizations, can be grouped into two basic categories—transactional and transcendental. Transactional myths can be pragmatic, emphasizing material goals. Transcendental myths focus on the “otherworldly,” non-material elements. Some groups may have foundation myths that are both transactional and transcendental.¹²¹

Myths appear to have universal qualities, the central one being the hero. Campbell believes that there is essentially “one archetypal mythical hero whose life has been replicated in many lands by many, many people.”¹²² Each hero follows a similar path or adventure. Odysseus, Moses and Buddha have all followed what Campbell describes as an archetypal adventure—that is a three-part journey of departure, fulfillment and return.¹²³ Hero figures—and indeed other mythological characters such as villains, helpers and false heroes—can play critical roles in narratives. Mythical characters provide a template which, once attached to a given actor, can transfer the properties, be they good or bad, from the original. While examples from various mythologies could be explored, an example of recent, constructed mythology may be useful. Historian Jonathan Vance, in his study of the wartime mythology which developed in Canada immediately after the First World War, noted that mythic character constructs, as they were promoted in popular culture, were formed using Vaudeville theatre as a template. Stage productions, books and films concerning the war were filled with borrowed stock character tropes, many of which are still in use today.¹²⁴ While endeavouring to prove how united Canada’s founding nations were in battle, native Canadians became stock characters in the post-war myth, as did French Canadians.¹²⁵

For Islam, the key hero / founding figure is Mohammad. When shaping their narratives, Osama Bin Laden and Mullah Omar attempted to follow in the footsteps of this hero. Through this association and the suggestion that each had also completed their own hero journey, these leaders attempted to gain mythical status for themselves and for their actions.¹²⁶ The key mythology which Islamic fundamentalists use comes from the era of the Crusades. Such myths are easy to compare to the current situation where the West is seen by some to be meddling in the Islamic world. Such myths also rely on the imagery of defensive armed struggle and, given that the Crusader era was approximately 200-years long, a sense of history and patience.¹²⁷

Myths generally form a significant pool from which the crafter of narratives can draw. Careful study of relevant mythology is equally important to the narrative analysis and counter-narrative efforts. In this process, special care should be taken to identify mythical characters and their associated qualities.

Media

The process of interpersonal communication, and in particular the various communications pathways, is a vast field of study. In an exploration of narrative and counter-narrative, it is critical to examine how communications work and some of the factors regarding pathways or media.

A basic model of communication is the *message influence model*, which suggests that a source sends a message through a channel to an audience. A (the source) has an idea or information which

is converted to a message. The message is transmitted through a channel (media) and is received by B (the audience) to be decoded and understood: thus $A \rightarrow \text{channel} \rightarrow B$. This model is based on the assumption that nothing has interrupted the channel or modified the message.¹²⁸ Author and literary theorist Umberto Eco espoused a similar concept, labelled the *model reader*. Eco sees the empirical author and empirical reader as A and B but establishes a model author and model reader as “filters” between the two. He further sees the text, or channel, as another filter.¹²⁹

A more sophisticated model is found in the *pragmatic complexity model*. This model suggests that the process of communicating is not simply the transmission of A’s message to B but that there are external factors influencing the message and that B’s perceptions and reactions alter the message. So, once A sends the message through a channel, it becomes “contextualized” and will be viewed through filters. Upon receiving the message, B then applies personal filters, opinions and attitudes. The model looks like: $A \rightarrow \text{channel} \rightarrow (\text{context and filters}) \rightarrow B$ (opinions and attitudes). This model also factors in the feedback that B will provide to A, thus potentially influencing the next message and creating more of a cycle.¹³⁰ The selection of channel or medium is clearly influenced by the context and the cultural filters, both external and internal to the recipient.

There has been a revolution in how information is communicated to target audiences, how that information is interpreted and if it will change attitudes or behaviours. Key to this revolution is the erosion of the control of the flow of information by nation states. Access to various media, including social media, now enables virtually any individual or group to tell their story to the world. With an explosion of new media outlets, audiences have broad exposure to narratives, with a corresponding reduction in “filters” or analysis. The traditional news cycles have shortened, and stories are repackaged quickly. Governments and organizations such as NATO have been struggling to understand this new information reality. New media are difficult to map, let alone control, and miscommunication is a constant threat.¹³¹

Organizations tell their stories using every type of media at their disposal. In addition to accessing the news media as discussed above, actors also “utilize the arts, including paintings, poetry, and song writing, and post flyers, distribute leaflets, author articles, and even publish their own newspapers and magazines.”¹³² Even the increasingly popular and widespread medium of the video game can be seen as a conduit for storytelling. The use of narrative in video games, in particular the hero’s journey narrative template, has become common.¹³³

New media has given organizations and individuals remarkable reach in terms of communications pathways. Cellular phone service has become incredibly widespread, and with it, the use of short message service (SMS) texting has spread. The Internet provides cheap and easy methods of disseminating a narrative, ones that are very accessible by both sender and target audience. Videos uploaded to sites such as YouTube can go viral, and often such imagery and messages are taken up by smaller or less reputable news agencies and then spread to the larger ones.¹³⁴ Newer Internet tools such as Twitter have had remarkable impact on the passage of information among the civil population, as was observed during the Egyptian uprising against the government of Hosni Mubarak¹³⁵ and other events of the so-called Arab Spring. The challenge has become telling a story in 140 characters.

While new electronic media has a revolutionary quality as a communications pathway, there are drawbacks. Sullivan notes that in spite of the impressive reach of both traditional radio broadcast medium and the Internet, the impact on the target audience may not be that great. The problem, he notes, is that these media are now flooded with information, and individuals can pick and choose what programmes, stations or websites they want. Getting the attention of the audience becomes the real challenge.¹³⁶

While very low tech, one of the most effective means of passing information is face to face. “Person-to-person communications,” writes Sullivan, “stands as one of the most fundamental and universally trusted realms of information in contemporary societies.”¹³⁷ Sullivan, in his work on social epidemics and memetics, found that memes have the most success at attaching to a “host” and being replicated when the idea is passed directly from person to person. Word of mouth, passed through existing social networks, can create social contagion epidemics—much like a virus.¹³⁸

The selection of a particular media will have considerable impact on how a message is received. Each media is subject to filters such as body language for face-to-face communications or webpage design for the Internet. Even the selection of a specific media can give the analyst important clues to the deeper meaning in a message.

This section has looked at several aspects of culture and briefly examined various models of cultural intelligence. Further, this section has examined concepts of communications and media pathways. Culture in this context is the palette for the creation and communication of narratives, along with the key to understanding the messages. The next section will present methods to analyse narratives and issues surrounding the crafting of successful counter-narratives.

5. Narrative analysis and counter-narrative strategies

Having looked at what constitutes a narrative and the various elements of culture and media, this section will focus on analysing the narrative and crafting the counter-narratives. We will first examine briefly the analysis of target audiences, propaganda and narratives. Next, a survey of suggestions as to the crafting of successful counter-narratives will be completed. Finally, the section will finish the analysis of narratives and narrative structures with a view to understanding an adversary’s narrative and finding areas to exploit for counter-narratives. This will include a proposed model for narrative analysis.

Target audience analysis

During the conduct of psychological operations, a thorough analysis of the human and psychological terrain is required. Analysts, working with military intelligence and other sources of information, will study various aspects of their operating environment. The factors that will be examined through this process are varied but will certainly include social, cultural, religious and historical elements.¹³⁹

In Canadian doctrine, the function dedicated to this process is called target audience analysis (TAA). TAA looks at a select group/audience to determine underlying beliefs, perceptions and attitudes; this process is essential for developing effective PYSOPS products. Such products must be designed specifically for each potential audience, or they will fail to communicate their messages. A TAA of an environment will examine both the current and historical aspects of a range of topics, including the distinct groups as well as their interrelationships, customs, traditions and power structures; the leadership, both formal and informal; pan-national relationships or movements involved; tribal and class barriers; and ideological credos of various groups/actors.¹⁴⁰ Within UK info ops doctrine, target audience analysis focuses on leadership (political, social and cultural), differences in perception, rural/urban divides and differing value sets (motivation and beliefs).¹⁴¹

A further aspect of a TAA is the medium. Analysts will study an audience to understand how information is passed. This will help in determining what product is appropriate for a given audience, be it leaflets, posters, radio broadcasts or television. What communications methods are accessible to the population and how well each is trusted play important roles, as does the level of literacy and education.¹⁴² This analysis will focus on items like communications structures (such as tribal structures), language, music and social taboos.¹⁴³

Propaganda analysis and counter propaganda

PSYOPS doctrine does not have a specific model to analyse narratives. The closest one is that of propaganda analysis and counter propaganda; both are related to narrative analysis and are subjects which bear examination. Propaganda is defined as “information, ideas, doctrines, or special appeals disseminated to influence the opinion, emotions, attitudes, or behaviour of any specified group in order to benefit the sponsor either directly or indirectly.”¹⁴⁴ Operators analyse the adversary’s propaganda to discover: weaknesses and strengths of the opponent’s understanding of the target audience, themes, messages, opponent intentions and errors which can be exploited. It is challenging work which can have a powerful effect on friendly force morale while attacking the same within the adversary’s ranks.¹⁴⁵ While several different approaches to propaganda analysis exist, a simple model is the Source, Content, Audience, Media and Effects (SCAME) approach.¹⁴⁶ This approach leads to conclusions drawn from the effects or desired effects identified for each category. The SCAME¹⁴⁷ approach is shown in Table 4.

Letter	Analysis Topic
S	Source analysis: What is the real source? 1. Authority 2. Authenticity and credibility 3. Type: white (open), grey (hidden) and black (disguised)
C	Content analysis: What the propaganda tells about: 1. Morale 2. Involuntary information 3. Biographic information 4. Economic data 5. Propaganda inconsistencies 6. Geographic information 7. Intentions
A	Audience analysis: Who is the audience? What are its characteristics (location, size, importance, political influences, religious influences, economic influences and ethnic influences)? 1. Apparent audience 2. Ultimate audience 3. Intermediate audience 4. Unintended audience
M	Media analysis: What media are used and why? 1. Type 2. Frequency 3. Reason
E	Effect analysis: What impact is this propaganda having? 1. Method used in analysis 2. Indication of effect: What events appear to be a result of this propaganda effort?

Table 4. SCAME approach

For PSYOPS practitioners, SCAME is a highly useful model. In the hands of an experienced analyst, who can dig much deeper and more thoroughly into each category, this model can yield much information that is used to develop counter-propaganda products as part of the IA plan.

Narrative analysis

While the analysis of propaganda as a general concept is relevant to narrative study, there is a need to focus on specific narrative elements and to dig deeper into culture, language, etc. A careful analysis of narratives is essential for crafting counter-narratives. Casebeer and Russell argue for a detailed understanding of narratives so as to counter them, while also arguing that such an understanding of a story's content, components and context will enhance the ability to assess the effectiveness of such a story on a target audience. As a simple analytical tool, Casebeer and Russell propose the use of a rhetorical model offered by the philosopher Aristotle. This model consists of *ethos*, *pathos* and *logos*. *Ethos* is the quality of the story which addresses the credibility of the speaker. *Pathos* is the appeal to the audience's emotions. *Logos* is the quality of logic or facts in a story. Simply put, is the story from a trustworthy source, does it "connect" with the audience and, ultimately, does it make sense?¹⁴⁸

Other story models discussed earlier are useful in such analysis. Many of the narratives offered by al-Qaeda follow the basic three-part story structure—set up, climax and resolution. The first part will set up the problem or grievance. The second will show the potential solution or present the hero in action. The third part will show either the solution to the situation or present a challenge or call to action for the recipient of the story. For al-Qaeda narratives, the reoccurring themes that dominate the three-part story structures are: (1) Islam is under attack, (2) only al-Qaeda and its followers are fighting the oppressors and (3) if you are not helping al-Qaeda, then you are helping the oppressors.¹⁴⁹

Crafting and countering narratives

A common thread found in the literature concerning issues of narrative and counter-narrative is that this is not easy work. Although he promotes narrative as an essential part of strategic communications and campaign planning, Tatham concedes that these efforts are "extremely challenging."¹⁵⁰ Others, like Graaf, doubt that counter-narrative work can be productive. She specifically questions the ability of any government to produce credible counter-narratives.¹⁵¹ For the most part, the consensus among the commentators is that successful narratives and counter-narratives created by governments, militaries and international organizations can be effective and are worth attempting.

In essence, there are two categories of narratives which are of concern to the military IA planner. First, there are our own narratives—these are the stories we are telling about ourselves. Second are the adversary's narratives which we must strive to counter. For the most part, the rules that govern the crafting of narratives apply both to our own narratives and the adversary's. We strive to strengthen our narratives and defend them, while conversely trying to find weaknesses in adversary's stories. Applicable to the crafting of narratives and any attempt to counter-narratives, the concept of *narrative fidelity* becomes an important element. At its most basic level, "messaging about a better life loses effect when sewage remains in the streets, electricity is only available six or seven hours per day and life is cheap."¹⁵² On a deeper level, a successful narrative—which draws on myths and cultural building blocks such as metaphors—may resonate with its audience, but if it is at odds with its cultural foundations, it can fail. Similarly, narratives which are not synchronized with other narratives from the same organization or within the same information campaign will weaken the message and give opponents potential opportunities to attack both the message and the credibility of the sender.¹⁵³ Narrative fidelity can be a significant issue when a meta-narrative is in play. This underscores the challenge of creating narratives, particularly with multiple partners and meta-narratives at play. NATO, for example, has a challenge to create a robust, functional narrative when there are 28 nations working with their own narratives. Further, a strategic NATO narrative—a meta-narrative, in effect—must be able to support tactical-level activities. Finally, narrative fidelity becomes a significant issue in such a multinational milieu.¹⁵⁴ Even within a single country, narrative and counter-narrative efforts can quickly be undermined by the actions of security forces and elements of the government which fail to match the narrative.¹⁵⁵

Casebeer and Russell offer some practical suggestions for counter-narrative strategies involving what they describe as six generic principles. These principles are: “competing myth creation, foundational myth deconstruction, creation of alternative exemplars, metaphor shifts, identity gerrymandering, and structural disruption.”¹⁵⁶

These principles underscore, among several elements, the importance of myths. As discussed before, the authors of any narrative must be “intimately familiar with the culture and symbols of a particular target group.”¹⁵⁷ With an understanding of the foundation myths used to support a narrative, a counter-narrative can be developed in two key ways. First, key elements of the myth, such as events or people, can be reinterpreted to either discredit the adversary’s narrative or to support a competing narrative. Second, an alternative or “better” myth can be promoted, challenging the original foundational myth.¹⁵⁸ Graaf argues that the only effective way to counter a narrative based on myths or legends is to focus on the true elements of the events—thus fighting a narrative solely with the “truth” rather than attempting to construct a formal counter-narrative.¹⁵⁹

Another of Casebeer and Russell’s principles is the creation of alternative exemplars. This involves identifying “characters” that might include leaders—current, historic or mythical—or other actors upon whom the target audience can be encouraged to focus. In effect, this tactic is an effort to influence an audience to “switch role models” and, thus, expose them to an alternate model of behaviour.¹⁶⁰

A well-known counter-narrative principle is that of the metaphor shift. This entails switching one metaphor description—complete with all the extra meaning—with a new metaphor. The key is to ensure that the shift is not too dramatic, or the audience may not make the leap.¹⁶¹ A somewhat hackneyed example is the framing statement: “one person’s terrorist is another person’s freedom fighter.” The label *terrorist* versus *freedom fighter* brings with it considerable baggage. As an example, during the Malayan Emergency of the 1950s, the British deliberately stopped referring to the insurgents as the Malayan Communist Party; they first used “bandits” and later “Communist Terrorists” in an attempt to delegitimize the insurgency and give them a less credible and “criminal” label.¹⁶²

A consideration in the construction of narratives and counter-narratives is that of flexibility. As discussed above, narrative fidelity is very important to the credibility of a narrative and its perceived author. Too rigid an adherence to a strategic narrative can expose stories to easy criticism at the local or “tactical” level. Successful narratives require flexibility to adapt to local conditions and ever-shifting events. This is a particular challenge when dealing with a rigid meta-narrative.¹⁶³

Finally, in practical terms, the most effective and successful narratives and counter-narratives are going to be “sticky.” Does a story resonate with its audience and why? Do people retain the ideas and elements of the narrative? As discussed earlier, Chip and Dan Heath cite parables and urban legends as examples of “sticky” narratives that are highly effective. Their essential story templates, the three being the *challenge plot*, the *connection plot* and the *creativity plot*, form simple counter-narrative templates to start with.¹⁶⁴ Understanding the target audience remains essential, as the most “sticky” of stories will fall flat if it fails to resonate.¹⁶⁵

A new narrative analysis model

While the SCAME model for the assessment of propaganda is a proven and reliable model, something more specialized is required for narrative analysis. Such a model would share certain characteristics with the SCAME approach, given that there are similar elements to be examined; however, an effective narrative analysis model will need to look deeper into key areas and will focus on the details of narrative structure and cultural elements. Here, then, is a proposed model for use in narrative analysis.

In keeping with the utilitarian approach of SCAME and other such models, this model is structured as Actors, Context, Content and Effects (ACCE.)¹⁶⁶ The basic model is provided in Table 5 and will be discussed in detail.

Letter	Analysis Topics
A	<p>Actors: Who are the parties involved, directly or indirectly, in this narrative?</p> <ol style="list-style-type: none"> 1. Source: Author or perceived author. 2. Audience(s): Who is the intended audience? Who are the secondary audiences and unintended audiences? 3. Characters: Who are the characters in the narrative? They may be real, historic or fictional and may be referred to directly or indirectly.
C	<p>Context: What are the filters and communications pathways?</p> <ol style="list-style-type: none"> 1. Meta-narrative(s): What master or meta-narrative(s) is/are at play? 2. Culture: What general cultural systems are at play? Are both the source and audience from the same culture? Are historic signifiers present? 3. Social Structure: Is tribalism at play? What is the human terrain? 4. Myths: Are there myths and legends referred to in the narrative, either directly or indirectly? 5. Language: Look at both written and spoken language. Are symbols a factor? 6. Metaphors: Search for metaphors. 7. Media: Look at the media in relation to the audience. Consider the physical aspects (radio, print, TV, face to face, etc) and cultural qualities of the medium chosen.
C	<p>Content:</p> <ol style="list-style-type: none"> 1. Structure: Look at the elements of the story, using Freytag’s triangle or Propp’s 31 functions (see Table 1). 2. Characters: Each character may have a cultural connection and/or a narrative function. 3. Truth. Is the story fact or fiction, or a mix of both? 4. Open messages: What was the clear message? Was it intended or unintended? 5. Hidden messages: Are there hidden messages, implied or suggested?
E	<p>Effects:</p> <ol style="list-style-type: none"> 1. Intended effects: What effect was assessed as the primary effect on the primary audience by the author? What was the actual effect on the primary audience? 2. Unintended effects: What effects may have happened which appear to have been unintended and what were the effects on an unintended audience? 3. Measure of effectiveness: Does the assessed intended effect work on the target audience? 4. Narrative fidelity: Does the story mesh with the meta-narrative(s) or other narratives from the source? Is it credible? Does it reinforce an established narrative? 5. Threats: How do the effects threaten friendly activities and narratives? What mitigation strategies are required? 6. Opportunities: What elements of the narrative are open for counter-narrative?

Table 5. ACCE approach

Actors. In all communications there are various actors. It begins with the author (Ecco's ideal author) who may or may not be the perceived author or authors (model author). The perceived author may also be the deliverer of the narrative, at which point the source blurs with the media (discussed below). The audience is the other key partner in the communications process. This analysis needs to look for evidence as to who the intended audience (model reader) was and who actually received the narrative. There are unintended audiences which need to be examined. The third category of actor is that of the characters found in the narrative itself. A narrative may be populated with characters that are living (but idealized) or historic figures; they could also be fictional or mythical characters. These characters may appear directly in a narrative but may also appear in "disguise," or they may simply be hinted at or referred to indirectly.

Context. This portion of the analysis is concerned with the "packaging" of the narrative. The first critical step is to identify any master or meta-narratives which may be at play. They may be hidden, and there may be multiple meta-narratives at play. It should also be established if the communication is cross-cutting one or more meta-narratives. The next key element of context is culture. Identifying which cultural system or systems are involved is critical to the analysis process. Does the narrative cross-cut culture? Are historic events or legends directly or indirectly mentioned in the narrative? If so, what signifiers or meaning is attached? In addition to the historic "terrain," the social structure and "human terrain" or demographics must be examined. The cultural context will help in the search for references to myths and metaphors; although, care must be taken to look for cross-cultural and pop cultural references so as not to be blinded by a single cultural template. Language and symbols are examined here, again looking cross-culturally. The final critical aspect of context is that of media. The communications pathways (radio, night letter, film, face to face, etc.) all have their characteristics which need to be examined. Media has a dynamic relationship with the actors (from perceived authors to target audiences), and some actors can become fused with the media. Analysts need to take care to understand this relationship.

Content. At this stage, the analysis looks at the narrative structure. While this could be as simple as looking at basic models of narrative structure such as those espoused by Van Dijk or Freytag, more complex models can be used such as Propp's 31 functions (see Table 1). Understanding the details of the functional elements of the story can give clues to deeper messages and can assist in later counter-narrative efforts. The same is true with respect to characters. While a variety of characters, present or in the shadows, will have been identified in the list of actors, it is here where each character will be assessed for narrative function and cultural significance. Finally, the content will be analysed for its messages. While some messages will be straightforward, others may be hidden, implied or suggested.

Effects. An analyst will have to examine a narrative to assess what the intended effects, both primary and secondary, were for the various audiences. Next, the actual effects must be assessed. Did the intent match the result? A further assessment needs to be made to determine whether the narrative was truthful and credible and if it was in line with any meta-narratives or previous narrative arcs. The analyst must further examine how the narrative may threaten friendly activities, communications and narratives which will drive mitigation strategies. Finally, an assessment must be done to seek opportunities which may arise from the hostile narrative. Can elements of the narrative be exploited?

In this section, we briefly examined target-audience analysis and the SCAME approach to propaganda analysis. Next, a proposed model for analysing narratives (ACCE) was introduced. Finally, this section dealt with some suggestions for crafting successful narratives and counter-narratives.

While challenging, the work of understanding narratives and crafting counter-narratives is an achievable and essential task for IA practitioners. In the next section, I will present a case study of the use of narrative by the Taliban and discuss issues surrounding coalition counter-narrative efforts.

6. Case study: The Taliban and narrative

Introduction

In order to better understand the importance of narrative in an operational context and to see how the previously discussed elements of narrative actually function, a case study of the Taliban will be presented. The Taliban have used narrative in many of the facets of their operation, as does NATO and the Afghan Government. All parties in this conflict attempt counter-narratives in the struggle to influence the resident population and other audiences around the world.

Although far from exhaustive in nature, this study is intended as a real-world example and a starting point for further analysis. While it is recognized that the Pashtun-based insurgencies in both Afghanistan and Pakistan consist of various actors and groups which have evolved over time through amalgamation and schism, the term “Taliban” will be used throughout this study as an overarching identifier.

The Taliban and information operations

The Taliban, both Afghan and Pakistani, are best viewed within the same framework. That said, they are far from homogenous, and individual members of the Taliban vary widely in training and in motivation. Some are dedicated jihadists from the Madrasa of Quetta, whereas many are simply Taliban of convenience, fighting for pay or on the orders of local tribal leaders.¹⁶⁷ The origins of all the Taliban factions are the same. After the withdrawal of Soviet forces and the collapse of the Afghan Communist government in 1992, there was a period of violence and turmoil. Opposed to the government of Buhanuddin Rabbini and compelled by the lawlessness and violence of the warlords, a group of Pashtun religious students (or Talib) banded together under the leadership of Muhammad Omar. The Taliban quickly gained a reputation as devoutly religious warriors who brought security and put an end to the criminal behaviour of the warlords. By November 1994, they had captured Kandahar. Within 18 months, the Mullah Omar’s forces would capture most of Afghanistan and govern it according to his fundamentalist Islamic vision until the post-September 11, 2001, US intervention. From the early days of the Taliban, Mullah Omar established an enduring narrative of security at all costs.¹⁶⁸

In terms of info ops and IA, the Taliban have a reputation as being highly capable, especially when compared to NATO. They have come to use many of the tools of modern communication while continuing to use the traditional methods as well. Analyst Thomas Nissen argues that the Taliban are much more effective than International Security Assistance Force at local influence and at synchronizing their information activities with their tactical actions. He further suggests that the Taliban are focused on information dominance and that the credibility of NATO is their primary target.¹⁶⁹ It has also been noted that Taliban effectiveness in the information domain is due not only to their perceived savvy but also to their speed at getting the message out, combined with no need to verify facts or work with the truth.¹⁷⁰ Not all observers agree. Researcher Tim Foxley counters the belief that the Taliban have an effective info ops campaign by looking at measures of effectiveness. “Speed-dialling journalists to take credit for an attack,” writes Foxley, “does not necessarily make the Taliban effective.”¹⁷¹ The Taliban messages are still unsophisticated and focused very much on fear. While they have a potentially better understanding of the local culture and, though traditional means, can gain local superiority of information pathways, their messages are still uncoordinated,

and they have trouble dealing with negative press, relying on denial as their main reactionary tool. At the higher levels, Foxely suggests that they simply lack the understanding to deal with strategic narratives and dialogue.¹⁷²

Meta-narratives

An interesting feature of the Taliban context is that there are essentially two significant meta-narratives at play: that of Pashtunwali and of Islam. The Code of Pashtunwali is an ancient meta-narrative which helps to form a “Pashtu national narrative [which] plays on the strong sense of resistance built upon the collective myth of combating foreign forces since the time of Alexander the Great.”¹⁷³ The Taliban also use the international jihadist narrative, which describes a struggle of Muslims against foreign occupiers which extends across borders to all Muslim lands.¹⁷⁴

The Islamic meta-narrative is certainly an enduring one. For the Taliban, Muhammad is the central figure and the “teller of the ultimate and even only story.”¹⁷⁵ Exported from Saudi Arabia into the Madrasa of Pakistan, the version of Islam which has dominated the Taliban is Wahhabism. The Wahhabist brand of Islam comes from the 18th century and represents a strict and conservative approach. It is, in effect, an attempt to replicate the type of Islam thought to have been practiced by Muhammad and his followers. Wahhabism is a very intolerant system which is dominated by the belief that only they are correct and that adherence to the Wahhabist ideals is mandatory. This stands in contrast to Pashtunwali, which is voluntary in nature, and led to the suppression of Sufi and Shia Muslims during the Taliban reign.¹⁷⁶

Central to Islam, and critical to the identity of al-Qaeda and the Taliban, is the concept of jihad or struggle. The Taliban refer to themselves as *mujahedin* or religious warriors, and they have embraced a focused concept of jihad, making it a central narrative.¹⁷⁷ The radical view of jihad is that it is primarily about armed warfare against the enemies of Islam, such as infidels and apostates. The moderate scholarly view is more balanced and diverse. Jihad is to strive for excellence in many differing fields, including goodness, nation building, poverty, education and even self-improvement.¹⁷⁸ Some scholars believe that jihad was originally designed to give early Islam some momentum and to keep the movement fresh. A further component of jihad is legitimate leadership. Jihad must be led by a sanctioned leader; a fact that Mullah Omar played on in 1996 when he wore the Cloak of the Prophet and declared himself *amir al-mu'mineen*.

The Taliban culture is a divided one. While Islam in general and the specific version of Islam upon which the Taliban was founded are culturally Arabic, the Taliban are also firmly rooted in the Pashtu tradition. The Afghan–Pashtun culture is very independent in nature and stands in contrast to the nomadic ways of the Arabic culture.¹⁷⁹ At its foundation, the Pashtun meta-narrative is encapsulated in the Code of Pashtunwali.

By tradition, Pashtuns (also known as Pathans) are all father-line descendants of a legendary figure named Qais, who was also known as Patan. Qais is believed to have lived around the time of Muhammad and was a convert to Islam.¹⁸⁰ There are 24 Pashtun tribes with numerous subtribes. These tribes are divided into two confederacies: the Durrani and the Ghilzai, with the Durrani being historically more politically powerful.¹⁸¹ In spite of the numerous tribes and subtribes, all the Pashtun people are united within Pashtunwali. While it has been suggested that Pashtunwali is over 5,000 years old, the first written evidence of it was recorded only 500 years ago, but the rivalry between Islam and Pashtunwali is very old.¹⁸²

Pashtunwali is the foundation of what it is to be a Pashtun. It stipulates aspects of honour and guides the day-to-day interactions of Pashtuns. Further, it provides a legal framework and the basis of governance through the establishment of the *shura* (a tribal council) and *jirga* (a tribal gathering). A fundamental principle of Pashtunwali is that every Pashtun is equal; thus, none have power or status above the others.¹⁸³ The foremost element of Pashtunwali is that of *Nang* or honour. The dignity and trust of both individual Pashtuns and that of their family and tribe is fundamental. Honour must be defended, often through revenge, and it underpins all other aspects of Pashtunwali.¹⁸⁴ Because Pashtun honour can be slighted in many ways (transgressions involving women, land and money are common), vengeance is a common storyline in Pashtu narratives. While being a culture of retribution and revenge, one prone to blood feuds which last generations, the cultural code has evolved to mitigate and prevent such activities.¹⁸⁵ Part of this balance includes *Nanawatai* or sanctuary and *Malmastai* or hospitality, each providing checks and balances.¹⁸⁶

There are significant gaps between Islamic Sharia law and Pashtunwali. Perhaps most significant is the treatment of women. For example, under Sharia, a woman can inherit property and easily obtain a divorce, whereas under Pashtunwali, a woman cannot inherit, and divorces are nearly impossible.¹⁸⁷

A third and somewhat fringe meta-narrative at play among the Pashtu people is that of class war. The historic relationship between Afghans and communism is not a happy one, and most aspects of Marxist thought are significantly opposite those of the Wahhabist-inspired Taliban. Yet, some elements of class struggle are present. “The Taliban’s ability to exploit class divisions,” observed journalists Jane Perlez and Pir Zubair Shah, “adds a new dimension to the insurgency and is raising alarm about the risks to Pakistan, which remains largely feudal.”¹⁸⁸ The situation allows the insurgents to take advantage of the divisions between the poor farmers and wealthy landlords. The Taliban can then “offer economic spoils to people frustrated with ... corrupt government even as the militants imposed a strict form of Islam through terror and intimidation.”¹⁸⁹

Socialist academic Michael Skinner argues that there is a significant shift in the “anti-imperialist” narrative which has dominated the situation in Afghanistan. He suggests that the Western media gives all the credit for anti-coalition and anti-government violence to the Taliban, ignoring Maoist insurgents and other non-violent socialist activities. This, in effect, is an attempt to suppress the Afghan socialists in favour of Islamic warlords who support a Western, capitalist system. Skinner claims that many varied socialist groups have now come together under a Maoist banner and are competing with the Taliban for the hearts and minds of the people. Further, he predicts that the class-struggle narrative will replace what he sees as the faulty narratives that only the Taliban are the oppressors of women and that the liberation of women is the primary goal of the coalition. While potentially using aspects of class division to their own ends, the Taliban are unlikely to move too far toward a Marxist position, given that the narrative of Marxism is *transactional*, whereas the narrative of Islam is *transcendental*. “There is,” Skinner observes, “no Islamic equivalent of Latin American liberation theology or Canadian Christian socialism in Afghanistan.”¹⁹⁰

The Pashtu context

The primary target audience of the Taliban is the Pashtuns of southern Afghanistan and northern Pakistan. As they are from the same cultural framework, it should be relatively easy for the Taliban to draw upon the traditions, myths and metaphors of their common Pashtu heritage when producing narratives. There is a strong literary tradition among the Pashtuns which encompasses stories and poetry. History in the forms of legends and myths play their part. In Kandahar, and Afghanistan in general, the key foundational figure is Ahmad Shah Durrani. Ahmad Shah, who added Durrani to his

name once in power, was the founder of the *Durrani* tribal confederation and is considered the father of Afghanistan. He became king of what was then Afghanistan in 1747, besting rival tribal leaders and establishing tribal rivalries which still exist. His reign lasted 25 years, during which he established Kandahar as central to Afghan and Pashtun culture and politics. He was also able to reinforce the independence of Pashtuns and the tribes, while also creating a somewhat contradictory centralized power and rule of law. He is highly regarded to this day and is a common figure in Afghan narratives of all types. Both his mausoleum and that of his politically astute mother are the sites of pilgrimage.¹⁹¹

The Pashtuns are an interesting mix of farmers, warriors and poets. Poetry has been a powerful element of Pashtu society, and poets, both past and current, are revered. Two influential historic poets, Khushhal Khan Khattak (1613–1689) and Rahman Baba (1653–1711), are highly regarded, and their work is still popular.¹⁹² The Taliban are able to draw from both the rich poetic traditions of the Pashtuns and those of the Arab Islamic tradition. This common tradition of heroic poetry may, in fact, be a binding element bringing the two meta-narratives together.¹⁹³ Poetry is not, however, the sole purview of the Taliban. Poetry continues to thrive among the Pashtuns, and young poets are actively writing and presenting their work. Not surprisingly, the violence of the insurgency has influenced their work; furthermore, themes of mourning, the desire for peace and the scourge of suicide bombers fill their work.¹⁹⁴

The traditional Pashtu stories are remarkably similar to traditional stories of other cultures. While a full survey of Pashtu stories is not possible here, it is worth looking briefly at one example. Pashtu stories are generally like most folk stories, containing many of the same rhythms and themes that one would find in Aesop or similar fables. A brief survey of available Pashtu stories reveals themes of trickery and violence, which are not unique but suggest the influence of Pashtunwali. As an example, a common Pashtu story is the *Seven Wise Men of Bunair*.¹⁹⁵ This story follows a familiar pattern; one generically described as “fools who cannot count themselves.”¹⁹⁶ As with other similar stories from differing cultures, the plot revolves around a group of travellers who attempt to count themselves but keep coming up one short because the counter fails to count himself. When a stranger arrives and successfully counts the group, they thank him for “finding” their “lost” companion. This story is found in many cultures, but the Pashtu version has a unique second part. In an effort to thank the stranger, this version has the “wise men” offer to work for him. He accepts, but the fools proceed to ruin his life through stupidity. The moral appears to be that one does not profit from taking advantage of a false sense of obligation—perhaps a subtle influence of Pashtunwali.

A study of the Pashtu language and all its metaphors is well beyond the scope of this project, but such a study would be vital to any counter-narrative activities. The importance is underscored by the following case. During coalition operations in Kandahar Province in 2005–2006, a common metaphor in use by English-speaking coalition officers, in the context of solving local problems, was “let’s put an Afghan face on this issue.” What was meant by these officers was that local Afghans need to solve their own problems or, at least, be perceived to be solving these problems. The trouble was that this metaphor, when often translated verbally into Pashtu, came out as “let’s make an Afghan puppet,” since “put a face on” translated most closely as a Pashtu metaphor for “making a puppet.”¹⁹⁷ This metaphor, used broadly by Taliban narrators, is derogatory and, while not intended, would be perceived as an insult.

Media

The Taliban exploit traditional and non-traditional media. These range from simple (but effective) face-to-face communications and night letters to other types including print, broadcast and the Internet. The Taliban use publications such as *The Vanguard of Khorasan*, *Tora Bora*, *Estiqamat*

and *Tanweer*. These contain material in both Arabic and Pashtu, and *The Vanguard of Khorasan* and *Tora Bora* are both available on the Internet in Portable Document Format (PDF) format. Digital versatile discs (DVDs) are mass produced and widely distributed. There are up to 70 radio stations broadcasting Taliban information to the tribal area.¹⁹⁸

Shabnama or night letters were used extensively during the Soviet occupation. They are typically aimed at public servants, teachers, pro-government clerics and sometimes poppy farmers. Their purpose is usually to dissuade individuals from working with or supporting the government or foreign forces.¹⁹⁹

In spite of early pronouncements against technology, the Taliban have certainly embraced the Internet to get their messages out. Further, they use cellular phones and short message service text messaging to target both media and local populations. The Taliban, however, suffer from the same technological challenges as other institutions. Recently, the *New York Times* reported that the Taliban had sent emails and text messages announcing the death of their leader, Mullah Omar, only to have their top spokesman, Zabiullah Mujahid, subsequently deny the event. Mujahid claimed that the Taliban telephones and Internet sites had been “hacked” by the “enemy” who was spreading false rumours.²⁰⁰

An interesting emergent media form is that of the video game. In May 2010, Electronic Arts, the successful California-based video-game producer behind the *Medal of Honor* series, announced their next product would include the Taliban as a play option. The updated *Medal of Honor*, set in Afghanistan, was slated for release the following October and had a feature which would allow gamers to take on the Taliban-fighter role and pit themselves against coalition troops. There was considerable outcry in the United States, especially among veterans and the families of soldiers killed in Afghanistan, who viewed the option as disrespectful of the fallen.²⁰¹ Politicians were quick to follow in condemnation, including Canadian Defence Minister Peter Mackay and United Kingdom Defence Minister Liam Fox.²⁰² Electronic Arts, and supporters in the gaming community, defended the Taliban option by stressing that it was just a game and that it was no different than “cops and robbers.”²⁰³ Under pressure from families and US military organizations, Electronic Arts abandoned the Taliban feature, although they retained the ability to play a generic “opposing force.”²⁰⁴

In November 2010, Electronic Arts’ rival, Activision, released *Call of Duty: Black Ops*, a similar game set during the Cold War. Within the first 24 hours, *Call of Duty: Black Ops* had sold 5.6 million copies in North America and 1.4 million in the United Kingdom.²⁰⁵ This record-setting sales figure underscores the remarkable reach that video-game media has developed. Understanding this fact reveals the true threat of the *Medal of Honor* Taliban option. Through this powerful new media path, *Medal of Honor* would have presented a Taliban narrative to millions of citizens of NATO partner countries. As an example of a “first-person shooter” type of game, players of *Medal of Honor* are encouraged to subjectively “experience” the condition of the character they play and often bond with their characters.²⁰⁶ By being offered a chance to play as a Taliban fighter, the player would have been offered a dramatic narrative which is sympathetic to the Taliban as individuals and which would likely add some measure of legitimacy to their cause. While such sympathy among younger members of Western populations may not have resulted in dramatic impacts, it may have softened some of the grass-roots support for military engagement in Afghanistan. It may have further encouraged those in support of the Taliban and the related Islamic jihadist movements.

Narrative content

To gain a limited understanding of some Taliban narratives, a brief analysis of what they are saying to the media (strategic narratives), what they are saying to themselves (operational narratives)

and what they are saying to the Pashtu people (tactical narratives) is in order. Further, this subsection will also examine a few literary elements of the Pashtu people.

Literature plays an important role in Pashtun culture. Folk stories and poetry have helped preserve the traditions of the Pashtun tribes for centuries, and the use of narrative during times of struggle is evident from the 19th century wars with Britain to the 20th century Soviet invasion. Such narratives are very important to semi-literate, rural tribes and have been used effectively by the Taliban in several media.²⁰⁷

The Taliban have been attempting to speak to various international audiences through multiple methods. These include all the traditional print and broadcast media and the Internet. A basic narrative analysis of Taliban press releases, as found on the Taliban website “Alemarah-ia.net” from the period 21–22 June 2011, reveals some interesting trends. First, these press releases are short and simple. They are mostly structured alike, having a headline, location, date and two or three sentences describing the events—usually covering most of the journalists’ five “Ws”: who, what, where, when and why. A typical example follows:

6 NATO invaders killed, 4 four wounded in Wardag WARDAG, June 22 – At least 2 NATO invaders were killed with four of the puppets and four NATO troops got seriously wounded during an attack conducted by Mujahideen [sic] on the patrol of joint enemy in Chaghto district of Wardag province on Tuesday.²⁰⁸

This format is media friendly and increases the chances that it will get picked up by some journalist or media outlet. A content analysis reveals that virtually all these narratives are focused on “body count” and are dominated by the language of warfare. These narratives contain no positive themes and make no attempt to address issues of local concern, such as governance, justice or health care.²⁰⁹

This example also highlights some of the reoccurring descriptors in use by the Taliban. The key characters in this story are the mujahedin who are the victors over NATO “invaders” and their local “puppets.” By labelling NATO soldiers as *invaders*, the Taliban are attempting to link them to the “crusader” metaphor, while also linking Afghan National Security Forces to the crusaders by labelling them with the term *puppet*. The use of the term *mujahidin* to refer to the Taliban fighters plays on collective memories of the Soviet invasion. It is effective because it not only elevates the Taliban fighters in status but also further associates NATO troops with the Soviet occupiers.²¹⁰

The truth and accuracy of these press releases is certainly questionable. Numbers of casualties as well as the amount and type of vehicles destroyed are heavily inflated. Foxley suggests that there are various reasons for such inaccuracies, ranging from the fact that the Taliban may not have accurate facts, that they are deliberately lying or that they genuinely believe it.²¹¹ Some of these inaccuracies can be very specific. On June 21st, the Alemarah-ia.net website reported that “Mujahideen [sic] of the Islamic Emirate carried out martyrdom attack on the vehicle carrying the provincial [governor] of Parwan province,” adding that, “the provincial governor got fatally wounded during the attack with two of the drivers, while two of his bodyguards were killed.”²¹² While some aspects of the Taliban narrative of the attack on Governor Abdul Basir Salangi appear accurate, the key fact that he survived the attack is clearly misrepresented and that one of the fatalities was a 14-year-old girl is omitted.²¹³ Fulford wrote that “in narrative, precise detail can give legitimacy to even the most outlandish tale.”²¹⁴ This phenomenon is frequently seen within these Taliban narratives, specifically with numbers of casualties, times of attacks and locations. Descriptions such as “US armoured motorcycle” and “green colored tank”²¹⁵ add details, so as to enhance the credibility of the stories presented.

A further insight into the Taliban narrative is through the *Layba* or code of conduct. First issued by the Taliban in 2006, and reissued in 2009 and 2010, the *Layba* is a written book aimed at regulating the behaviour of its commanders and fighters. This was an attempt to address problems which had hindered the Taliban and damaged their reputation. It is also an aspirational document, given that its narrative themes include Islam, rule-bound jihad and Islamic government.²¹⁶ While promoting the image of the Taliban as the bringers of security and justice, it also suggests a subtext of power struggle between commanders, such as the late Mullah Dadullah, and Mullah Omar. As with other Taliban narratives, all the *Layba* issued to date are vague on issues concerning development, health care, schools and aid workers. While the discipline of the *Layba* may be seen as protection for health-care workers, teachers and non-governmental organizations (NGOs), the code of conduct falls short of International Humanitarian Law.²¹⁷ Insight into the struggle between the Wahhabist and Pashtunwali meta-narratives is also evident in the Taliban code of conduct. In the *Layba* issued in August 2010, the Taliban stipulate that in judicial matters, Pashtunwali should be the first recourse. Only after the problem cannot be solved by a local *jirga* in the traditional manner should the case be referred to an Islamic court. While this may be a short-term, pragmatic approach, it does suggest a softening of the Taliban position toward Pashtunwali.²¹⁸ The *Layba* may ultimately prove to be a source of vulnerability for the Taliban, as it can highlight the differences between the Taliban leadership and the rank and file while also presenting a wedge between Islam and the tenets of Pashtunwali.²¹⁹

Key to the Taliban's tactical communications strategy is the use of night letters. Night letters are blunt instruments of intimidation, yet they can be a sophisticated blend of history and poetry. Unlike NATO PSYOPS leaflets, night letters are often handwritten and individually targeted.²²⁰ Taliban night letters frequently reference the grand history of Afghanistan; in particular, they will reference important figures that carry great meaning to both Pashtu and Islamic traditions. Chief among these historic figures is Ahmad Shah Durrani (Abdaali). A translated night letter contained in a work by Thomas H. Johnson of the United States Naval Postgraduate School demonstrates this reference to history and this hero figure:

Message to the "Mujahed" (freedom fighter) Afghan Nation!

You have served Islam a great deal throughout history and have defeated the non-Muslims of the world. Your ancestors such as Amhad Shah Abdaali . . . and other heroes have recorded a great history in fighting against the non-Muslims, but it is a pity that today some American-trained servants under the name of bright-minded have destroyed the honoured history of Afghanistan.²²¹

This night letter goes on to list a series of transgressions made by the "non-Muslims" and to encourage the target audience to join the struggle and become a martyr. It ends in a poem. Taliban night letters will often contain detailed Islamic references, specifically invoking the name of Allah. They will also likely be delivered so as to be timed with an action or a deed—such as an execution—so as to enhance the intended threat.²²² The religious themes will likely be used to play up the aspect of the ultimate struggle—one between Islam and the infidels. Language like that found in the Taliban press releases is common; thus, the struggle is between the "innocent [Afghan] brothers and sisters" and the "crusaders' and 'their domestic servants.'"²²³

Countering the Taliban narrative

There is a considerable challenge for NATO in understanding Taliban narratives and counter-narrative efforts. Even the Karzai Government, which is significantly more culturally attuned, has to work hard to counter Taliban efforts. Below is a brief survey of some of the anti-Taliban efforts.

To internal Afghan populations, radio is still a dominant medium for communications. Both the Taliban and the Government of Afghanistan—with their NATO allies—use radio to pass narratives to their target audiences on a continuous basis. The now defunct Radio Rana was set up in Kandahar by the Canadian Forces as a sophisticated PSYOPS tool; it used a mix of music, news, public service announcements and call-in programmes to entertain and influence the younger demographic of the Kandahari population. Over the life of the station, it attempted to connect to traditional Pashtun culture, including poetry.²²⁴ NATO Radio Sada-e Azadi also seeks to use traditional narratives for its own effect. Their website includes traditional Afghan folk stories in addition to new stories crafted in the traditional style.²²⁵

Once banned by the Taliban, access to television by average Afghans has been increasing, especially in the urban areas. Tolo TV, which claims to be Afghanistan's first commercial television station, provides a variety of programming such as game shows, dramas and reality television. Tolo claims a large audience through free air broadcasting into 14 Afghan cities and satellite broadcasting in central Asia, Europe and North America.²²⁶ While anti-Taliban and pro-government narratives have been present on television for some time, new ways to tell these stories are emerging. One such example is a relatively new television programme funded by the US Government called *Eagle Four*, a police drama modelled after Western thrillers which features plenty of action and car chases. The story focuses on an elite police team who fight criminals in war-torn Afghanistan. The intent is to paint the Afghan National Police in a more positive and professional light. The programme also pushes the envelope in somewhat controversial ways by having female actors featured as police officers in prominent roles. While *Eagle Four* has been getting mixed reviews and it is difficult to know how many Afghans are watching, it does represent a broadening of media pathways and narrative templates in the bid to communicate to the population.²²⁷ Canada has also embraced this approach by funding a similar police drama called *Separ* (Shield), intended to “educate the country on the proper roles and duties of the Afghan National Police.”²²⁸

Methods of countering Taliban narrative using traditional ways have included one Canadian innovation, that of using night letters. Starting in February 2011, Afghan National Security Forces (ANSF) patrols began to distribute Canadian-produced night letters in villages in the Panjwaii District of Kandahar. These letters were designed to be similar to the night letters of Taliban origin, but with a very different message. Complete with ANSF imagery and symbols, the message is that the ANSF is here to stay and are protecting the villages at night. Although there was some initial reluctance to the concept of using a method so closely associated with the Taliban, the perceived benefits won out over the negatives. In addition to delivering the ANSF message of security, these night letters also demonstrate an ability to take over Taliban communications pathways and, therefore, undermine the Taliban narrative of dominance.²²⁹

How effective has the counter-narrative work of the Karzai Government and International Security Assistance Force been against the Taliban narratives? As argued by Foxely, getting a measure of effectiveness of either campaign is extremely difficult. There is some evidence that local, traditional narratives—delivered face to face or with night letters—can have an immediate effect (especially if combined with deeds such as assassinations), but such tactics may not have long-term impacts.²³⁰ With new media comes new ways of telling stories, and while it is easy to gain insight into the impacts of television and the Internet in Western society, it is much harder in a transitional society like Afghanistan. In Afghanistan, drawing on culturally connected narratives to influence the target population combined with the continued use of all media pathways are most likely to have long-term impact. Developing and employing narratives which exploit the fissures between Wahhabist Islam and Pash-tunwali may present the best opportunities. Such a counter-narrative strategy “should remind Pashtuns

that their individual and collective honor is at stake, and that honor will only be cleansed when the Taliban is no more.”²³¹ Additionally, a focus on narratives concerning empowerment of the people may help counter the negative Taliban narrative of destruction.²³²

7. Conclusion

The aim of this paper was to examine the role of narrative and counter-narrative in military activities, specifically in the arena of influence activities. Although relevant throughout the history of warfare, narrative and counter-narrative as military tools have increased in importance. In this era of information operations and strategic communications, the ability to influence audiences and to protect one’s own forces and populations is critical. Frank remarked that “if stories are dangerous, this is because they are powerful.”²³³ This was the challenge of this study, to delve into the various disciplines to appreciate the danger and to understand the power. In an operational context, narrative is an enduring method of attracting people to a cause and influencing the population, especially in the counter-insurgency environment where the population plays such a significant role. Further, it helps guide organizations and bind partners in coalitions or alliances. It is not just the business of specialists but also part of the commander’s arsenal.

During the brief survey of Canadian and allied doctrine, it was found that narrative and counter-narrative concepts are recognized as important elements of the contemporary operating environment, especially in the context of counter-insurgency operations. Canadian COIN doctrine boldly states that “the power of narrative cannot be underestimated,”²³⁴ a sentiment largely echoed by allied doctrine. In spite of this recognition, most doctrine warns that attempting counter-narrative strategies is highly challenging and risky. Largely absent from the doctrine was any meaningful guidance on crafting narratives and counter-narratives for use in military activities.

Psychology and literary theory form the foundation of understanding how narratives work. In Section 3, a look at models drawn from influence psychology and marketing aided in grasping these principles. Framing and meta-narratives help guide audiences in a general direction. Narrative templates like the ones explored by theorists Propp and Van Dijk serve to give an audience information in a familiar format.

Culture fuels the narrative machine. Myths, symbols, language and tribalism are all elements of culture which must be understood and analysed before crafting narratives and counter-narratives. Section 4 examined several models of analysing culture in the influence and narrative context, including the concept of cultural intelligence. The section also examined media pathways and communications theory. Both traditional and “emerging” media have unique qualities and must be understood to be effectively used.

Section 5 looked at the analysis of narrative by first exploring counter-propaganda and target audience analysis. While often described as a very challenging task, there are practical approaches to counter-narrative work. An important requirement in this process is a good analysis of adversarial narratives. Presented in this section was a proposed model for narrative analysis—ACCE.

Within the case study of the Taliban presented in Section 6, practical aspects of the use of narrative were examined. The struggle between the Taliban’s two meta-narratives—Islam and Pashtunwali—is a dominant feature of the narratives and counter-narratives at play in southern Afghanistan and Pakistan. New and traditional media are being used by all sides, ranging from night letters to the Internet. Afghan poets are still admired, but increasingly, so are the characters in Afghan television programmes.

This study was a brief survey of the many disciplines of narrative and counter-narrative. For the IA practitioner, the challenge is to delve deeper into critical areas. As a start, three areas present themselves for further study and research. First, more needs to be understood about the relationship between narrative structures and the “science” behind what Cialdini called the “weapons of influence.”²³⁵ Second, a detailed study of the culture terrain of relevant peoples needs to be done. Combing through the literature—myths and stories—is a daunting task but is the essential work required to pursue counter-narratives. The final recommendation to the IA practitioner is to look to the master storytellers. During the Second World War, the Soviets had great narrative success with the story of *Alexander Nevski*, a Russian national hero who defeated the German Teutonic Knights in 1242. In the hands of film-maker Sergei Eisenstein and composer Sergei Prokofiev, this story found new life and had a tremendous effect in bolstering the war efforts of the Russian people.²³⁶ Today’s IA practitioners can turn to the storytellers of Hollywood who have great successes in shaping and retelling our myths and legends—using both the “science” and “magic.” They must, however, also look to Bollywood and beyond.

For the CF to better equip its people to deal with narrative and counter-narrative work, more effort must be put into the doctrine, which is currently limited. Further, those individuals who regularly work in this domain, public affairs officers and PSYOPS operators, need to be better exposed to the underlying elements of narrative theory and practice. Finally, basic narrative concepts should be included with theatre mission-specific cultural training aimed at all members deploying into a theatre of operations. General awareness can only enhance the ability of the CF to excel within the psychological and information planes of military activity.

Abbreviations

ACCE	Actors, Context, Content and Effects
ANSF	Afghan National Security Forces
CF	Canadian Forces
CG	centre of gravity
COIN	counter-insurgency
CQ	cultural intelligence
DND	Department of National Defence
IA	influence activity
info ops	information operations
MOD	Ministry of Defence
NATO	North Atlantic Treaty Organization
PSYOPS	psychological operations
SCAME	Source, Content, Audience, Media and Effects
TAA	target audience analysis

UK	United Kingdom
US	United States
USMC	United States Marine Corps

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Chapter 2 – CF18s in Combat from Iraq to Libya: The Strategic Dividend of Fighters

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Abstract

Since acquiring the CF18 in the mid-1980s, the Hornet has conducted combat operations in Iraq, Kosovo and now Libya, which have all resulted in significant strategic benefits for Canada. The 1991 First Gulf War came after decades of peacekeeping cultivated a public opinion which initially restrained the government from dogmatically employing fighter resources in an offensive manner. Thus, the Mulroney Government used a cautious approach to warm the public to Canada's international responsibilities and the strategic impact of fighters. During the Kosovo air campaign eight years later, CF18s were not politically restrained, and they again achieved strategic benefits without a single casualty. The current CF18 operation over Libya was initiated with unprecedented political and public consensus, showing that the primacy of fighters is now well entrenched in the minds of the government and the public. However, the CF18 did not deploy to Afghanistan, which has perplexed those in the fighter community, considering there has been a profusion of close air support required there. This paper will examine these operations and show that the historical decision to deploy CF18s has, in fact, reflected a consistent emphasis on the strategic benefit of fighters in spite of the Afghanistan aberration. This paper also reveals that CF18 operational lessons have often been deferred, which has brought the fighter force precariously close to irrelevance, counter to the government's customary emphasis on the political expediency of this niche capability. As the debates continue regarding the F-35 acquisition, this paper will highlight the requirement for the government and the public to appreciate the historic basis and the contemporary relevance of fighters' strategic dividend.

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1. Introduction

Canada is a country with a very rich history of fighter aviation spanning the First World War to the operation currently underway in Libya. Canadian fighter aviators have consistently demonstrated incredible courage, professionalism, resiliency and adaptability. They have done so in spite of difficult periods, owing to insufficient funding and an inconsistent national security strategy. The attention that fighter aviation receives from historians, the media and the general public reflects the mystique of air power and the incredible cost of modern aircraft. From the exploits of the earliest biplanes to the ongoing debates regarding Canada's F-35 acquisition, fighter aviation has captured the imagination of Canadians, while at the same time casting doubt regarding its utility.

The pre-eminence of fighters in Canada historically stemmed from the country's economic and geopolitical standing after the Second World War with Cold War imperatives hastening the expansion of North Atlantic Treaty Organization (NATO) forces in Europe. After an incredible post-war demobilization from 165,000 all ranks to 12,200, the Royal Canadian Air Force (RCAF) soon became a government priority.¹ Original post-Second World War RCAF plans called for a modest "balanced" force of bomber, fighter, maritime-patrol, air-transport and tactical aircraft. However, due to domestic and alliance pressures, by the early 1950s the RCAF had become focused on fighters, both in terms of aircraft composition and identity.² According to the *1949/50 Defence White Paper*:

Canada is unable to support the immense production and maintenance burden of a large strategic bomber force. The Canadian Air Force is concentrating on developing jet-fighter interceptor squadrons, employing the latest and best jet fighters available.³

By the end of 1953, 12 squadrons were divided among four fighter wings in England, France and Germany, which, according to historians Brereton Greenhous and Hugh Halliday, "constituted the largest RCAF fighter force ever assembled."⁴ For the decades that followed, Canada attempted, with few successes, to develop its own fighter aircraft and juggled a mixed fleet with inconsistent political mandates to fulfill its domestic defence and alliance commitments.⁵ A controversial project was launched in the late 1970s to replace three platforms with a single off-the-shelf multirole aircraft.⁶ The CF18 was selected and has since provided Canada with an offensive military capability, which the government has used to gain a "seat at the international table."⁷

Over the last two decades, Canada's use of fighter aircraft as an instrument of foreign policy has been influenced to a degree by younger generations of isolationists and a very reactive acquisition process. However, the government has recognized the clear strategic benefits of applying offensive air power on the international stage. Since Canada acquired the CF18, it has conducted combat operations in three theatres: Iraq, Kosovo and now Libya. However, for the last 10 years fighters have not deployed to Afghanistan in spite of the need for close air support in a complex counter-insurgency (COIN) campaign. Their absence in this particular theatre has called some to question if fighter aircraft have lost favour with the military and/or political leadership. Although it seems like an odd blip in the radar of fighter employment, there is a logical explanation. This paper will show that Canada has consistently used the CF18 to achieve strategic benefits and, thus, the primacy of fighter aircraft remains deeply entrenched in the minds of government and, increasingly, the public.

It is important to note that Canadian Air Force history has been poorly documented over the last few decades. In the past, full-time historians actively chronicled peacetime and combat operations;

however, today, with fewer people and budgets stretched thin, few historians remain loyal to the task. Unit historical reports tend to be a broad-brushed overview of activities, reflecting a high-operational tempo with priorities lying elsewhere. As a result, there is a paucity of academic literature on modern CF18 operations, and as systems become increasingly complex, fighter activities are clouded in greater secrecy. This unclassified paper, therefore, relies extensively on interviews with key officers, both retired and currently serving, to paint as full a picture as possible within an unclassified forum. In particular, the decision not to send CF18s to Afghanistan was largely made behind closed doors with little documentation or paper trail. Additionally, with operations ongoing in Libya, interviews and news reports were the only references available at the time of writing. Modern Canadian fighter operations offer a fruitful field of study that would be greatly enhanced if more airmen and airwomen would take the time to put pen to paper in their particular areas of expertise.

The following sections will provide a comprehensive examination of the CF18 in combat to show that their employment has been non-partisan and has exposed the military to low operational risk while achieving high strategic benefits. In Section 2, CF18 participation in the 1991 Persian Gulf War will be explored to show that their full potential was held back by an unclear and indecisive political mandate. However, this deployment also gradually reintroduced Canadians to the warrior spirit of the modern fighter pilot and challenged the idea of Canada as a peacekeeping nation. It was the first modern example that Canada must be willing to dip its hands in the metaphorical “bucket of blood” if it is to gain a “seat at the table” on the international stage.⁸ It was also the first operation where there were early signs that Canada’s front-line fighter was beginning to fall behind other Western air forces in their evolution towards precision capabilities. In Section 3, the subsequent willingness to send fighters into the Balkan conflict will be examined and will show that precision air power maintained favour among the public, politicians and military strategists. It will demonstrate that Canada did not have the capability to project its fighter force rapidly throughout the world, but once in theatre, they punched well above their weight. The Kosovo air campaign was a political success for Canada, but upon closer examination, it showed the ageing CF18 fleet was not keeping pace with technology, thereby justifying a long overdue midlife upgrade. Section 4 will examine the impact of the terrorist attacks against the United States on 11 September 2001 (9/11)—a singular event which fundamentally changed homeland and aerospace defence strategies while giving the Army its first war since Korea. It will look at Canada’s contribution to the war in Afghanistan and will answer why, with over a thousand allied close-air-support aircraft in theatre and with Canadian troops in contact, CF18s were left to watch from the sidelines. It will dispel the conspiracy theories which have circulated and that blame personal biases for the fighter community’s conspicuous absence. It will show in the end that CF18s would not have provided the government with any more strategic dividends—a prerequisite for using a very costly military capability. In Section 5, the latest CF18 combat operation in Libya will be identified as a textbook example of Canada’s “set-piece” deployment of ships and fighters when the government is disinclined to have boots on the ground. The political consensus and rapid deployment of CF18s to conduct the third Canadian bombing campaign in 20 years shows that Canada has come a long way since its cautious approach in Iraq and now has the ability to force project almost as fast as an aircraft-carrier battle group.

Each section will outline the relevant events as well as political and public opinion and will identify lessons learned which relate to the relevance and viability of the fighter force and its ability to fulfil its mandated role for government. The concluding section will recommend ways to ensure the Canadian fighter force remains relevant and ready for future operations, thereby securing Canada’s “seat at the international table.” It will not propose a justification for acquiring the F-35 or any other specific “next-generation fighter” but, rather, will outline the conditions which must be met

for the Canadian government to effectively use its fighter aircraft to achieve strategic inroads in the international community. It will identify how the Canadian Forces can position itself to be relevant and ready when called on by the government.

2. First Gulf War (1991)

Operation DESERT STORM, the First Gulf War (1991), may have been “the mother of all battles” for Saddam Hussein, but for Western militaries, it was a watershed event which established the primacy of precision weapons.⁹ It also demonstrated that modern air power could shape the battlefield, giving ground commanders the freedom to manoeuvre without prohibitive interference. After an overwhelming air superiority and interdiction operation, it took just four days for coalition forces to cause the Iraqi Republican Guard to capitulate. It was legitimized by the United Nations (UN) and came at an opportune time for the United States to demonstrate the utility of their incredibly advanced and increasingly costly military. For Canada, it had been four decades since the military’s last offensive operation in Korea, and it was the first time the media would bring almost real-time graphic reports to the living rooms of its citizens.

Initially, Canada deployed two destroyers and a supply ship to conduct interdiction operations. By the end of the war, they would be joined by 24 of Canada’s newest CF18 fighter aircraft, a Boeing 707 tanker, a field-ambulance hospital and a modest contingent of Army personnel to provide force protection. The traditional left-right political schism guided the debates on Canada’s involvement while the public’s view of Canada as a peacekeeping nation was fundamentally challenged. This section will argue that the deployment of CF18s in a progressively “offensive” defensive counter-air role with a surge of kinetic, purely offensive strikes at the end was a conscious decision by a cautious government. As frustrating as it was for the fighter pilots capable of doing so much more to be limited by public opinion, it was in fact the best way Canadians could be reintroduced to the warrior spirit of their Air Force.

Background

*In the early morning hours of August 2nd, Iraqi armed forces, without provocation or warning, invaded a peaceful Kuwait. Facing negligible resistance from its much smaller neighbor, Iraq’s tanks stormed in blitzkrieg fashion through Kuwait in a few short hours. With more than 100,000 troops, along with tanks, artillery and surface-to-surface missiles, Iraq now occupies Kuwait.*¹

– United States (US) President George H. W. Bush, 8 August 1990

In President George H. W. Bush’s first official speech following Iraq’s invasion of Kuwait, he correctly stated that aggression was not provoked; however, his assertion that it came without warning is not entirely true. Iraq had never recognized the independence of Kuwait, granted by Britain in 1961, and openly claimed parts of Kuwait’s territory as its own.¹¹ Near the end of July 1990, Iraq possessed a formidable military force, and tensions escalated when it claimed that Kuwait was driving down oil prices by not respecting the quotas established by the Organization of the Petroleum Exporting Countries (OPEC) and slant drilling into Iraqi territory.¹² At the time, the Canadian government and military were distracted by the controversial events unfolding at Oka. While soldiers mobilized to dismantle a blockade of armed Mohawks in Quebec, Saddam Hussein

was massing troops, tanks and artillery along the Kuwait border. Many nations incorrectly assessed Iraq's posturing as a chest-pounding bluff to force Kuwait to concede on disputed territorial and economic issues. They were proven wrong, when in the morning hours of 2 August 1990, Saddam's forces invaded the sovereign territory of another nation.

Without delay, the UN held an emergency session and issued Resolution 660, calling for the immediate withdrawal of Iraqi forces and for Iraq and Kuwait to begin "negotiations for the resolution of their differences."¹³ Emerging from the decline of the Soviet Union, as the world's only superpower, the US naturally assumed the lead to ensure Saddam complied. Canadian Prime Minister Brian Mulroney enjoyed a close relationship with President Bush and was one of the first world leaders asked to join the coalition. During their telephone conversation on 4 August 1990, Mulroney made it clear to the US President that Canada would only engage in military action with the backing of a legitimate UN Security Council Resolution.¹⁴ They agreed in principle to a plan which involved Canada helping enforce the economic embargos being tabled at the time.¹⁵

Sequence of events

Initial military recommendations

When Iraq invaded Kuwait, the Minister of National Defence, Bill McKnight, and the Chief of the Defence Staff (CDS), General John de Chastelain, were out of country on unrelated business. The responsibility of providing a military recommendation to Mulroney devolved to Vice-Admiral Charles Thomas as Acting CDS. Not surprisingly, the Navy officer offered the services of Maritime Command to shoulder the initial military response. In fairness to Thomas, with the Army implicated in Oka and the Air Force carefully watching the deteriorating situation in Eastern Europe, few options were available. Though the ships identified for the task group were physically ready for a short-notice deployment, they were not adequately equipped for the Persian Gulf threats. They were designed and fitted for Cold War antisubmarine operations and lacked critical systems to counter Iraq's Exocet-equipped fast patrol boats, helicopters and air force jets.¹⁶ In spite of these deficiencies, Mulroney announced, on Friday 10 August 1990, that Canada would send Her Majesty's Canadian Ships (HMCSs) TERRA NOVA, ATHABASCAN and PROTECTEUR on Operation FRICTION "to deter further Iraqi aggression."¹⁷ Defence analysts immediately questioned the operational suitability of the ships, which included the oldest destroyer in Canada's fleet.¹⁸

Ships "rusted out" but refitted quickly

The 1987 *Defence White Paper* cited decades of neglect as the cause of "a significant 'commitment-capability gap'"¹⁹ in the Canadian Forces (CF), with the Navy being one of the most "rusted out" services. As a result, the government committed to a "vigorous naval modernization program";²⁰ however, the collapse of the Soviet Union changed defence priorities, and at the time Operation FRICTION was announced, modernization was far from complete. Many critics felt the Canadian ships in their current configuration would be vulnerable in the Persian Gulf, putting their sailors at a significant risk. Among the critics was defence analyst and retired Rear-Admiral Fred Crickard who questioned, in particular, the ships' self-protection capabilities against air threats.²¹ The government and military were well aware of the deficiencies and embarked upon an aggressive refit to bring the ships to an acceptable level of operational capability. Two weeks after Mulroney's announcement, Crickard toured the refitted ships and was impressed by the upgrades which had been made in such a short time. However, he still feared this small Canadian task group would be vulnerable to air attacks—unless adequate air cover was provided.²²

CF18 option quickly presented

CF18s were not an immediate consideration because they could do little to enforce the initial embargos and Canada's commitment to NATO in Europe had not been officially reduced.²³ However, the Soviets' tacit support of UN resolutions against Iraq and the Cold War abeyance permitted NATO to release Hornets from their German bases without leaving the European theatre vulnerable.²⁴ It did not take long for the Air Force to conduct staff checks and determine that they were in fact a viable option.²⁵ For the government, deploying fighter aircraft in a defensive role would be the "meat on the bone" of Canada's contribution the general public would be willing to digest. On 14 September 1990, before the Canadian Naval task group had even arrived in theatre, Mulroney announced that Canada would "deploy a squadron of CF18 fighter aircraft from Lahr, West Germany to the Gulf ... and provide air cover for our own ships and the ships of friendly nations."²⁶ Less than a month later, 18 Canadian Hornets were in Doha, Qatar, poised to commence Operation SCIMITAR.²⁷ The task force was unofficially known as the Desert Cats since the majority of the personnel were from 416 "Lynx" Squadron and 439 "Tiger" squadrons. For the first time in over four decades, Canadian fighter aircraft would fly in combat.

Defensive role and the UN deadline

Initially, CF18s were assigned defensive combat air patrols to protect coalition naval assets conducting intercept operations and embargo enforcement.²⁸ The first few months were relatively uneventful; the Iraqi Air Force was never bold enough to really test coalition fighters over the Gulf. However, Saddam was bold enough to remain in steadfast defiance of all resolutions and international pressure. As a result, the UN passed Resolution 678, which established 15 January 1991 as the deadline for Iraq's withdrawal from Kuwait. If Iraq did not comply with the deadline and all previous resolutions, the resolution authorized under Chapter VII of the UN Charter the use of "all necessary means to ... restore international peace and security in the area."²⁹ As the deadline approached, Mulroney was in close contact with Bush regarding the invasion plan and Canada's role.

Mulroney cautiously steps into sweep/escort role

On 16 January 1991, Mulroney made his first cautious step towards offensive action by authorizing CF18s to conduct sweep and escort missions across the border of Kuwait.³⁰ The new mission involved escorting coalition aircraft without an air-to-air capability into enemy territory. It was a much riskier endeavour than air patrols over the Gulf, since it required CF18s to enter Iraq's air-defence umbrella. The Air Force sent an additional six aircraft and maintenance crews to Doha in early January 1991 to accommodate increased sortie rates and potential combat attrition.³¹

The first sweep and escort mission was launched on 20 January 1991, and to the frustration of Canadian pilots, CF18s were still not challenged by the Iraqi Air Force.³² Laden with offensive air-to-air weapons, they became the de facto bait for the Iraqi air-defence system so that trailing F-4E "Wild Weasels" Phantom aircraft could engage or electronically jam radar sites that showed any interest in the Canadian fighters. According to the Desert Cats' commanding officer, Colonel Don "Fang" Matthews (Retired, then a Lieutenant-Colonel), being "locked up" by surface-to-air missile (SAM) radars initially created some very tense moments of "jinking and chaffing,"³³ but over time, the pilots grew accustomed to it. As long as pilots stayed above 15,000 feet [4,572 metres], they would remain above the effective altitude of anti-aircraft artillery and could evade the surface-to-air missile radars using manoeuvres and countermeasures.³⁴ According to the Deputy Commander of the Canadian Air Task Group – Middle East (CATGME), Lieutenant-Colonel Denny Roberts, the missions were "like sneaking into your bedroom at 3 a.m. and trying not to wake your wife."³⁵ For several weeks, Canadian pilots provided comfort to the bombers they escorted but grew frustrated by a seemingly futile mission.³⁶

No Battle of Britain for Canada

The Iraqi Air Force was targeted heavily during first few days of the war, compelling many of Saddam's pilots to make the low-level "defection dash" to Iran. The coalition recognized this trend and set up combat air patrols between Baghdad and the Iranian border, successfully intercepting and destroying several MiG-23s.³⁷ The Iraqis brave enough to look for action were outmatched technologically, and their pilots were at a severe proficiency deficit. On one occasion, a "kill" was claimed by a coalition aircraft without firing a single shot.

The very first aerial victory of the war was claimed by an *unarmed* EF-111A Raven on 17 January 1991 while conducting a stand-off jamming mission. During the mission, the Raven was surprised to find an Iraqi Mirage F1 directly behind it. Surprise turned into shock when the F1 launched an air-to-air missile. The Raven's pilot conducted a diving break turn and dispensed countermeasures which successfully decoyed the Mach 2 projectile. When the Raven pulled out of its diving turn at only a few hundred feet [approximately 61 metres] above the Iraqi desert, its crew observed the Mirage F1 impact the ground, exploding in a fireball.³⁸ The Iraqi pilot had followed the Raven through the vertical manoeuvre without enough altitude to recover. He learned the hard way that the Earth has a kill probability of 100 per cent and that one can only tie the world low-flying record. The overwhelming superiority of coalition pilots and aircraft, exemplified by this first air-to-air engagement, was a sign the air war of DESERT STORM would be no Battle of Britain.

The vast majority of the 34 confirmed allied victories against fighter aircraft were achieved by the United States Air Force's (USAF's) F-15C Eagle, a pure air-superiority fighter dedicated to defensive counter-air, sweep and escort missions for the entire conflict.³⁹ Only three victories were claimed by multirole aircraft: two by United States Navy (USN) F-18C Hornets and one by a USN F-14A Tomcat.⁴⁰ Canada's multirole Hornet manned the combat air patrols to the south where Iraqi aircraft never ventured, while the sweep and escort missions occurred with air superiority already achieved. It was becoming clear that Canadian Hornets would have to take the fight to the enemy. This occurred in an unconventional way on the night of 30 January 1991, when a formation of CF18s attacked an Iraqi patrol boat.

After two weeks of uneventful combat air patrols, Capt Steve "Hillbilly" Hill and Major Dave "DW" Kendall did not hesitate to accept their shipborne controller's unexpected request: "would you like to strafe a boat?"⁴¹ The boat in question had escaped an A-6 attack when the American Intruder aircraft ran out of ordnance. After receiving final clearance to engage from their controller, the two Canadian pilots emptied their 20 millimetre (mm) cannons over multiple strafing runs. With only air-to-air missiles remaining, they attempted to acquire an infrared lock to fire an AIM-9 Sidewinder missile. The boat's heat signature was too low, and after some trouble, "Hillbilly" acquired a radar lock and fired an AIM-7 semi-active radar missile at the boat. The missile impacted the water short of the target, at which time both pilots returned to base. The boat was eventually finished off by US bombers, but the Canadians were officially awarded an "assist" to its seaworthiness kill.⁴² Hill and Kendall were extolled by senior military officials at home for their "example of Canadian can-do."⁴³ However, the Canadian Air Task Group – Middle East Commander, Colonel Roméo Lalonde, conveyed to the press in theatre a different opinion, asserting they should have made fewer passes to minimize their exposure—he was not entirely happy about the attack.⁴⁴ They had, after all, wasted a \$250,000 air-to-air missile on a boat in the first offensive action by the Canadian military since the Korean War. The engagement was admittedly unorthodox, but Lalonde's criticisms were viewed to be a little harsh by most officers in the fighter community.⁴⁵

Sweep/escort missions progress and bombing finally authorized

Meanwhile, acting as “bait” during the sweep and escort missions marginalized the CF18’s capabilities and frustrated Canadian pilots who were capable of much more. In early February, Lalonde questioned the rationale of the role when the Iraqi Air Force had been rendered impotent. In spite of his reservations, General de Chastelain insisted that Canada continue the missions based on the air order of battle which still existed in Iraq.⁴⁶ In Ottawa, speaking on behalf of the headquarters staff, Commodore Murray pointed out that there was “still a gap there between ... [the number of pre-war Iraqi combat aircraft] and what we can confirm are out of action.”⁴⁷ According to Murray, Canada was “not in the business of gambling” on Iraq staying grounded.⁴⁸ After months of combat air patrols and weeks of evading air defences, CF18s were finally authorized to conduct bombing missions.

On 20 February 1991, Minister of National Defence Bill McKnight announced that Canada would commence an offensive bombing campaign, describing the decision as “a logical evolution of our role in this conflict.”⁴⁹ However, the Commander of Air Command at the time, Lieutenant-General Fred R. Sutherland, recalled that it may not have been an evolution but, rather, the result of an appeal by the United States for Canada to “metaphorically dip its hands in the bucket of blood.”⁵⁰ The Desert Cats anticipated changing to an air-to-ground role and had already completed ground school and reviewed their bombing theory by the time the announcement was made.⁵¹ After a few days of training flights to consolidate the theory, the pilots and aircraft were ready to go, but one critical resource was missing—bombs. While war stocks were en route from Germany, the United States generously provided ordnance for the first few days of the Canadian offensive. On 24 February 1991, a flight of four CF18s (call sign Talon 01) dropped the first bombs from Canadian aircraft in combat since the Second World War. Before the fighting stopped on 28 February 1991, Canada conducted 56 bombing sorties and dropped more than 100 tonnes of ordnance on military targets.⁵²

Political and public opinion

*War is merely the continuation of policy by other means.*⁵³

– Carl Von Clausewitz

The political decision to become militarily involved in the US-led coalition in the Gulf, and to what degree, was guided by many internal and external factors, with policy forming only part of the equation. Saddam’s invasion of Kuwait was a clear violation of international treaties and customary law and demanded a stern international response. A clear mandate from the United Nations Security Council and the support of the Arab League were essential to legitimize the response. Canada was in a position to contribute since Cold War posturing had ceased and felt a responsibility to both the United Nations and the United States (its main ally) to do so in a substantive way. However, Canada’s contribution was politically controversial and significantly constrained by the “peacekeeping nation” perception stemming from decades of “blue beret” operations. Clausewitz’s simplistic theory above applies well to conventional state-on-state conflicts but breaks down in the context of modern multinational coalitions, especially for self-proclaimed middle-power nations like Canada.

Fighting the “peacekeeping nation” perception

A 16 August 1990 *Globe and Mail* editorial titled: “Risking a Peacekeeping Reputation” reflected the belief held by many Canadians that the blue beret had become the only authorized headdress for CF members.⁵⁴ In the editorial, Nicola Vulpe argued that Mulroney’s decision to deploy a naval task group had “compromised Canada’s traditional and admirable role as an international peacekeeper.”⁵⁵

Mulroney, on the other hand, argued that Canada's involvement in the First Gulf War did not compromise its reputation and emphasized multilateralism and international order as the foundation for the intervention:

Our military response to Iraqi aggression is fully compatible with our tradition as international peacekeepers. Canada has been amongst [the most] active of all countries in multilateral peacekeeping efforts over the last forty-five years. Canadians have served in more than twenty peacekeeping operations, from the Congo to the Sinai, from Indochina to Namibia. And we are all proud of that tradition. But our peacekeeping role neither excludes us nor excuses us from the call to resist aggression. The roles are complementary, as both serve the larger political purpose of preserving international order and are very much in Canada's interest.⁵⁶

McKnight highlighted that a peacekeeping reputation only existed by virtue of generations of stability. He also reminded Canadians about their rich military heritage:

Some Canadians see our involvement in the Gulf War is somehow inconsistent with our role as peacekeeper and mediator. They would have our forces stay out of the fighting, and restrict themselves to providing peacekeeping forces after hostilities have ended. This view, however, shows a fundamental misunderstanding of Canadian tradition. Two generations of Canadians have been blessed, having never experienced their nation at war, and having seen their armed forces only as peacekeepers. But in two world wars and the Korean War, more than 1,500,000 Canadians served their country overseas, and more than 100,000 gave their lives.⁵⁷

Mulroney and McKnight reiterated these sentiments during many public addresses, and although it took time, the public began to understand this line of thinking.

Early polls revealed that most Canadians actually favoured sending forces to the Persian Gulf but were loath to the idea of Canada engaging in an offensive war. In September 1990, 58 per cent of Gallup poll respondents supported Canada's military presence in the region—but only to help enforce the UN embargos.⁵⁸ When a subsequent poll modified the question and specified “going to war against Iraq,” [emphasis added] only 36 per cent were in favour and 55 per cent were opposed.⁵⁹ The slogan “no blood for oil” regularly appeared during marches, and two days prior to Bush's 15 January 1990 deadline, 25,000 Canadians across the country demonstrated against Canada's involvement.⁶⁰ Then by late February 1991, a surprising 58 per cent of Canadians favoured war, while only 38 per cent opposed it, marking a significant change in public opinion.⁶¹ This shift coincided very closely with the beginning of the CF18 bombing campaign. With a government inextricably tied to public opinion, the military's hands were tied until the final days of the war.

Lessons learned

During the First Gulf War, the operational capability and interoperability of the CF18 was not a limiting factor. However, the chain of command's sensitivity to “leaning forward” inhibited training in theatre and delayed the eventual conduct of air-to-ground missions. The war was the first display of American “shock and awe” precision weapon systems, and because Canada only conducted three days of bombing, few took note of how ineffective the CF18's imprecise systems and unguided weapons were.

Link 4 data link

To fully integrate with naval assets, CF18s required the Link 4 system which was not part of the initial Hornet acquisition. Once Mulroney announced the deployment of Canadian fighter aircraft to the Gulf theatre, the United States agreed to loan Canada enough Link 4 components to ensure interoperability. It provided pilots with situational awareness regarding air contacts and indicated if they were hostile, friendly or unknown. The information was sent via data link from the controlling ships. The pilot needed only to interpret the data and manipulate their cockpit display. Although not ideal to introduce new systems on the eve of war, the benign nature of the combat air patrols and the relative simplicity of Link 4 allowed the Desert Cats to gain proficiency during the course of their operational missions.⁶²

Defensive counter-air weapons

Another minor deficiency, highlighted by the patrol-boat engagement, was that CF18s lacked appropriate weapons for their combat air patrols. The biggest threat to naval assets in the Gulf was the Exocet anti-ship missile. They were in Iraq's inventory and could be employed from helicopters, fighter jets and fast patrol boats. The AIM-9 Sidewinder and AIM-7 Sparrow were not the weapons of choice against the low and slow moving helicopters, and "Hillbilly" proved they were not anti-ship missiles. The tactical experts identified that configuring aircraft with one rocket pod would provide an effective weapon against both helicopters and ships; however, with the politicians avoiding any perception of offensive action, rockets were only delivered after the war was over.⁶³ In Matthew's opinion, the chain of command would have allowed rocket pods in a defensive counter-air role, but they were just not available in theatre.⁶⁴

Precision guided munitions

Precision weapons were relatively new to combat aircraft and gained a great deal of media attention throughout the war. The constant images on major news networks of precision-guided bombs and missiles "knocking on bunker doors" were impressive to watch. At the time, Canada's CF18s lacked a targeting pod capable of supporting precision guided munitions (PGMs) but were authorized to carry PGMs as "bomb trucks" for American aircraft (equipped with the "Lantirn" targeting pod) to guide them to their targets. However, the decision came late, and PGMs had not arrived in Doha before the war ended.⁶⁵ Canadian pilots conducted their air-to-ground missions with great skill, but the effectiveness of their unguided bombs delivered from high altitude and sometimes through clouds is debatable. It was clear that PGMs would be a critical component of any future air campaign, and for the first time, the CF18 was falling behind the technology curve.

Air-to-ground training

During a four-month period at the beginning of 1990, the fighter force experienced a handful of fatal mishaps. Lieutenant-General Sutherland emotionally recalled: "I was Commander of the Air Force when we lost five F-18s and four pilots in four months, which nearly drove me to resign ..."⁶⁶ He implemented an operational pause to determine, beyond the investigative cause factors, why so many accidents had occurred. A working group of senior fighter-force officers determined the capabilities of the aircraft were exceeding pilot capacity and training. A "step back" was taken, and 1 Canadian Air Division in Europe was restricted to the air-to-air role to reduce pilot workload.⁶⁷ The air-to-ground proficiency of the Desert Cats had atrophied, which necessitated a work-up in theatre. However, every attempt to conduct air-to-ground training before 20 February 1991 was prohibited by the Commander of Canadian Forces Middle East, Commodore Kenneth J. Summers.

Matthews anticipated the possibility of a bombing role as early as the fall of 1990. He even staffed papers that outlined a detailed training plan to prepare the Canadian pilots to safely conduct air-to-ground missions. Ground school on bombing techniques and theory was provided well in advance, and weeks before the first bombs dropped from CF18s, Matthews requested authorization to conduct dedicated training missions over Qatar. He was flatly denied by Summers, who was concerned that if the media reported air-to-ground bombing missions were being rehearsed it would embarrass the government. Matthews defiantly scheduled practice missions anyway only to get caught by a “spy ... who called [Summers] to spill the beans.”⁶⁸ When Summers learned that an air-to-ground practice mission was airborne, he called Matthews and ordered him to recall the aircraft in flight within 30 minutes or face a court martial. The four days between the government’s announcement and the first Canadian bombs falling on Iraqi targets were a result of Matthews’ refusal to commence operations until his pilots conducted a couple of training flights—the ones he was ordered not to do weeks earlier.⁶⁹

Conclusion

The First Gulf War was an important event in Canadian military history. It was the first offensive combat action in four decades by Canadian forces. However, the Mulroney Government’s reluctance to “dip its hands in the bucket of blood” was guided by a public which had grown generationally apart from Canada’s Second World War and Korean War experiences. The evolution of the CF18 mission from defensive combat air patrols, to sweep and escort, and then finally to air-to-ground bombing missions reflected a government inextricably linked to public opinion. The notion of Canada as a peacekeeping nation was challenged, and CF18 operations helped to gradually reintroduce Canada to the warrior spirit of its Air Force. According to the authors of *Operation Friction: The Canadian Forces in the Persian Gulf*, the government:

Got exactly what it wanted: an active but limited participation in the Coalition that was conducted at arm’s length from direct American control, and to a degree to which a middle power with a limited defence budget can realistically aspire in the expensive high-technology business of modern war.⁷⁰

The Gulf War example of deploying ships and then fighter aircraft has become the “set piece” Canadian sequencing for conventional conflicts or anytime the government does not favour boots on the ground. They are commitments which achieve substantial credit geopolitically, and they avert the backlash which accompanies soldiers dying in a controversial war. Ships and fighters result in low operational risk and high strategic reward. However, they are also the most expensive platforms in the Canadian Forces’ inventory and require constant upgrades to remain relevant.

The integration of the Link 4 system was done just in time in the Gulf and improved Canadian interoperability. However, avionics and sensors have become more complex, and not all systems would be as easily integrated as the Link 4 was in 1991. Canada’s lack of a targeting pod and laser-guided munitions did not detract from its overall performance in the Gulf because the task group only conducted 56 bombing sorties. But, the successful demonstration of precision weapons during the war, in effect, prescribed the same capability for all future air campaigns. The cuts to Canada’s defence budget which followed the First Gulf War would preclude the fighter force from being fully prepared for its next operation in spite of the clear trend towards precision capabilities.

The role of the military is to prepare for missions which fit within accepted doctrine but not to appear to be ahead of the government on matters of operational tasks. CF18 pilots were restricted

from conducting air-to-ground training flights because of concerns that media reports would embarrass the government. This resulted in a delay of four days before the first Canadian bombs were dropped. The government's position was anything but consistent, so implicit political restraints became explicit military constraints, which frustrated the pilots who could see the writing on the wall. In Canada's next fighter operation, the government's gloves would come off right from the start.

3. Bosnia and Kosovo

Shortly after the First Gulf War, another regional conflict became the focus of international attention. In the Balkans, the perfect storm of complex ethnic divisions and independence movements created conditions which degenerated into widespread violence and human suffering. During the 1990s, there were no less than seven named UN missions in the region, ranging in scope from police-force training to enforcing ceasefire agreements between belligerent parties.⁷¹ However, peace was transitory, and when diplomatic efforts failed, air power was relied on to avert a humanitarian crisis.

The Canadian Air Force was slow to mobilize as the Balkan conflict evolved, but eventually, a contingent of CF18s arrived in Aviano, Italy, to conduct offensive combat operations over the Federal Republic of Yugoslavia. From 24 March to 9 June 1999, Canadian Hornets joined aircraft from 14 other countries in a 78-day NATO-led air campaign called Operation ALLIED FORCE (OAF). This section will show that from the Canadian political perspective the operation was a resounding success, but from the Air Force's perspective, it could have quite easily been a failure. In contrast to the First Gulf War experience eight years earlier, the government approved CF18 offensive operations from the outset of the Kosovo air campaign. The political restraints which relegated CF18s to almost purely defensive operations during DESERT STORM had been removed, but the government's failure to modernize and recapitalize the Canadian Forces throughout the 1990s was beginning to take its toll. CF18s had recently been modified to employ precision guided munitions, but they lacked several capabilities which detracted from the overall favourable assessment of their performance in theatre. The growing capability gap between the CF18 and other allied platforms was bringing Canada's front-line fighter to the verge of obsolescence. In spite of the many challenges and deficiencies, CF18s flew nearly 10 per cent of all strike missions during the campaign with just 2 per cent of the total number of coalition aircraft—a tribute to the dedication and professionalism of all personnel involved.⁷²

Sequence of events

DENY FLIGHT

The roots of the ethnic and religious disputes in the Balkans go back centuries, but the first trigger of the modern regional conflict occurred during the summer of 1991. When Croatia declared independence from the Socialist Federal Republic of Yugoslavia, Croatian Serbs backed by the Yugoslav People's Army violently opposed it. After a series of diplomatic efforts failed to curtail the fighting, a United Nations Protection Force (UNPROFOR) was authorized to re-establish peace and security on the ground.⁷³ Subsequently, ethnic divisions in Bosnia–Herzegovina resulted in an expansion of the original UNPROFOR mission. On 13 March 1993, an aerial attack by an unidentified combat aircraft on villages east of Srebrenica compelled NATO to commence Operation DENY FLIGHT, a no-fly zone with an “all measures” UN mandate.⁷⁴ It commenced on 12 April 1993, drawing fighter aircraft from several nations into the region.⁷⁵ Even though the operation was focused on airborne threats, aircraft conducted isolated precision strikes in response to requests from the UNPROFOR

commander. CF18s deployed to Europe for a NATO exercise four months after DENEY FLIGHT began—ironically as a demonstration of Canada’s ability to respond to a European crisis.⁷⁶ The reality was that CF18s were not suited for the Balkan theatre at this stage because they lacked a PGM capability and the fighter force was busy repatriating their German squadrons.

DELIBERATE FORCE

Although more than 30,000 soldiers were on the ground and superior air forces were overhead, warring factions continued to violate the terms of the settlement.⁷⁷ In late August 1995, ground forces could not secure designated safe areas, compelling NATO to launch Operation DELIBERATE FORCE. This pre-planned bombing campaign lasted 16 days with a total of 3515 sorties flown by aircraft supporting Operation DENEY FLIGHT. A total of 1026 bombs were dropped against fielded forces, heavy weapons, command and control facilities as well as lines of communication, of which 69 per cent were precision guided. Eight nations participated in this short and decisive action, with the United States conducting the overwhelming majority of combat missions.⁷⁸ DENEY FLIGHT successfully ended the violence, thereby reinforcing the lessons drawn from the First Gulf War regarding the effectiveness of precision air power. The US Ambassador to NATO, Robert Hunter, called it the “most successful use of strategic bombing as a deterrent to aggression in modern history.”⁷⁹ Because the CF18 did not have a precision capability, there was still neither push nor pull to get them into theatre.

DELIBERATE GUARD

In early 1997, the fighter force finally acquired the Nitehawk forward looking infra-red (FLIR) pod and a limited number of laser-guided bombs. On 14 August that same year, six CF18s deployed to Aviano, Italy, in support of Operation DELIBERATE GUARD, the NATO Stabilization Force’s enforcement of a no-fly zone over Bosnia. The “air policing” deployment was an opportunity for the Canadian government and the Air Force to show that its recently acquired targeting pods and precision capability were deployable in support of a coalition operation.⁸⁰ It was an uneventful three-month mission which received very little media attention and was all but forgotten by most prominent Air Force historians.⁸¹ However, the deployment was significant because it signalled that Canada had finally caught the “PGM train” and demonstrated the government’s willingness to push fighter aircraft into theatre with a potential for offensive action.⁸² When the CF18s left, the situation on the ground appeared to be stable, but that did not last for long.

DETERMINED FALCON

On 11 June 1998, after months of increased violence on the ground, NATO defence ministers agreed that a show of force might help defuse the situation. Operation DETERMINED FALCON was planned as an air-power demonstration that would be conducted over Albania and Macedonia. NATO hoped it would encourage Slobodan Milosevic, President of the Federal Republic of Yugoslavia, to cease his aggression towards ethnic Albanians in Kosovo.⁸³ Canadian Defence Minister Art Eggleton expressed an immediate desire to participate in what his British counterpart George Robertson categorized as “diplomacy backed by the threat of force.”⁸⁴ However, the deployment of Canadian fighters was delayed because Canada lacked strategic airlift and air-to-air refuelling platforms. According to journalist Paul Koring, the government’s decision to retire the Boeing 707 tanker in 1997 without tendering a replacement “left the CF18s all but marooned at their bases.”⁸⁵ Canada also lacked strategic airlift platforms, making delays inevitable when a contracted Antonov was initially denied access to the air base in Aviano. On 15 June 1998, the show of force went ahead

without CF18s—Koring did not miss the opportunity to point out their “conspicuous” absence.⁸⁶ Canada’s inability to enter the theatre quickly was veiled under Prime Minister Chrétien’s insistence on cabinet approving the deployment, but even after Cabinet convened, it took eight more days and several delays before the first CF18s departed for Italy.⁸⁷

ALLIED FORCE

In 1997, the Balkan conflict migrated from Croatia and Bosnia to Kosovo where violence between Serbian forces and ethnic Albanians rapidly escalated. Milosevic believed that Kosovo was historically the “heart of Serbia.” For years he promoted Serbian nationalism and advocated autocratic rule in the area while actively suppressing Albanian desires for self-determination. The Kosovo Liberation Army (KLA) emerged to counter what they viewed as oppressive Serbian aggression. A series of increasingly violent KLA guerrilla attacks and Serbian reprisals led Milosevic to begin targeting key Kosovar leadership and to commence a “scorched earth” campaign against Albanians in the region. By September 1998, it was estimated that 250,000 Kosovo Albanians had either fled or been driven from their homes, with tens of thousands homeless as the cold winter approached.⁸⁸ Recognizing the grave nature of the situation, the UN Security Council passed Resolution 1199 on 23 September 1998, calling for all parties to cease fire.⁸⁹ Months of diplomatic negotiations and sanctions failed to arrest hostilities between the KLA and Serbian forces. When Milosevic mobilized nearly one third of his army around Kosovo in preparation for an obvious offensive, NATO was forced to take action. After months of uneventful no-fly zone missions, Canadian fighter aircraft launched on 24 March 1999 as part of the first wave of strike missions in support of Operation ALLIED FORCE. For 78 days they conducted offensive counter-air, defensive counter-air and interdiction missions to compel Milosevic to end his ethnic cleansing crusade.⁹⁰ In the end, DETERMINED FALCON—the show of force in June 1998—did not achieve its desired effect, making Canada’s “conspicuous” absence a moot point.

Political and public opinion

In the months leading up to the air campaign, policymakers were operating in a permissive and generally supportive domestic political environment. The need to intervene against and arrest the brutal humanitarian suffering of Albanians outweighed national security interests, alliance commitments and subservience to a coercive United States foreign policy. Canada was not being forced into a NATO campaign it did not fully support. However, the government did require time to rationalize a gradual withdrawal from its traditional dependence on UN mandates, which gave explicit legitimacy for military action. Once it was understood that the UN was paralyzed, Canada became what Kim Richard Nossal and Stéphane Roussel called a “happy follower” of the US and NATO.⁹¹ The air campaign took much longer than expected but, again, reinforced the strategic weight a token task force of fighter aircraft can carry with it.

When CF18s deployed on 24 June 1998, the Canadian government still held tightly to the notion that a UN mandate was required for any type of military action.⁹² The fact that an “all measures” resolution had not been approved caused some to question what role fighter aircraft would play in the region. According to government officials, the deployment was to enforce the no-fly zone over Bosnia and to conduct any future shows of force similar to the one Canada was conspicuously absent from nine days earlier. In reality, the deployment would show support for alliance partners and buy time for the international community (and the general public) to accept that NATO must take action without it being explicitly sanctioned by the UN Security Council.

In a special parliamentary debate on 7 October 1998, Minister of Foreign Affairs Lloyd Axworthy outlined the exhaustive steps which had already been taken to engage the UN. With Russia expected to exercise its veto on any resolution authorizing force, he implored the House to carefully consider if enough legitimacy existed within the current framework for NATO to act. Milosevic continued to violate existing Security Council ceasefire resolutions, and no one could deny that egregious human-rights violations continued unabated. The other political parties almost unanimously endorsed the government's position to support a possible NATO offensive. Reform Member of Parliament (MP) and foreign affairs critic Bob Mills expressed his frustration with the diminishing utility of the UN at the hands of Russia's powerful veto. He acknowledged that Canada "may end up fulfilling NATO action as opposed to UN action."⁹³ New Democrat MP Svend Robinson and Bloc Québécois MP Daniel Turp both indicated support for military action, the latter even provided the House with possible legal solutions to the intricacies of acting without a UN mandate. Progressive Conservative MP David Price criticized the Liberal Government's apparent kowtowing to the United States and the United Kingdom (UK) but nonetheless expressed his party's support for military action. Axworthy closed his statement that day with a powerful comment which reflected the altruistic nature of the war Canada would soon fight: "all it takes for evil to triumph is for the good to do nothing."⁹⁴

When the air strikes began, Parliament remained united, with one exception. Price was the lone dissenter during the debates on 24 March 1999, but his comments appeared to reflect partisan campaigning rather than a true party position. On 7 October 1998, he argued that NATO was the only credible force which "must act now" and that Canadian CF18s "must be used."⁹⁵ Five months later, he was admonishing the government for launching an air attack against a sovereign state and even suggested that Canada "may have broken the codes of international law."⁹⁶ The day after Price made this controversial statement, Conservative leader Joe Clark expressed the true party position which fully supported military action in support of the NATO mission.

Russia, a traditional ally of Serbia, openly opposed the Western alliance's military action. After the first strikes occurred, President Boris Yeltsin stated he was "profoundly outraged" by NATO's "outright aggression" and its "violation of all norms of international law."⁹⁷ This was the first military operation in which Canada had been involved that did not have a UN mandate. It was also the first time that NATO had used its military power against a sovereign nation and the first time that the international community had intervened in such a forceful way to stop a civil war. It was no surprise that Canadians of Serbian descent opposed the operation, and at times, their public demonstrations did turn violent.⁹⁸ However, they represented a very small demographic, as the majority of Canadians supported the government's decision to intervene, and more specifically, they supported its small but effective fighter force.⁹⁹ A Gallup poll taken in April 1999 showed that 70 per cent of Canadians believed that CF18 participation in Kosovo should either remain the same or even increase.¹⁰⁰ Apparently, the use of fighter aircraft was becoming an acceptable foreign policy tool in the eyes of Canadians.

Lessons learned

Canada's contribution to the Kosovo air campaign was initially 6 CF18s, which increased later to 18. They deployed to Aviano on 24 June 1998 under the Canadian name Operation ECHO. The CF18 detachment in Aviano called themselves the Balkan Rats—a politically incorrect name coined for the abundance of the destructive rodents in and around the Canadian quarters on the airfield.¹⁰¹ Over 78 days, the Balkan Rats conducted 678 combat sorties and logged approximately 2600 flying hours. They delivered 532 bombs, of which 361 (68 per cent) were precision guided. Approximately 18 per cent of these missions were strictly defensive combat air patrols. Over the course of the campaign, Canadians achieved an air-to-ground success rate of approximately 70 per cent, which

was on par with many allies with more capable platforms and avionics. CF18 pilots were also chosen to lead many strike packages—an implicit recognition of their abilities and professionalism. Combined exercises like MAPLE FLAG and frequent cross-border training with US fighter units had developed a level of interoperability few other nations enjoyed. In contrast to Canada's experience during DESERT STORM, the CF18s conducted a consistent ratio of counter-air and strike missions from the beginning to the end of the Kosovo air campaign. Multirole fighters like the Hornet, capable of employing precision guided munitions, were exactly what the air component commander wanted.¹⁰² Canada's fleet of CF18s had been given the minimum tools necessary to be effective, but they certainly were not the technological leaders of the pack.

The capability and effectiveness of the CF18 had improved significantly since DESERT STORM, but the aircraft and pilots still lacked several very important systems. The most notable deficiencies were: a lack of interoperable jam-resistant radios, night vision goggles (NVGs), a global positioning system (GPS), sufficient numbers of FLIR pods and adequate precision-weapon war stocks.¹⁰³ Many lessons learned from Kosovo stemmed from these observations and provided justification for a \$1.2 billion CF18 modernization programme. Task Force Aviano was successful due to outstanding pilot performance, which compensated for not having the best equipment available.

Jam-resistant radios

During ALLIED FORCE, Canada was the only nation which lacked jam-resistant communications, relegating the entire strike force to use a single ultra-high frequency (UHF) radio plan.¹⁰⁴ Anyone on the ground with a simple UHF receiver could find strike package frequencies and listen to everything pilots and controllers were saying. This made coalition aircraft vulnerable to Serbian communications jamming, which could have severed a critical command and control link. The United States Department of Defense (DoD) asserted that the deficiency severely compromised operations security and further claimed it “reduced the effectiveness of NATO air strikes and increased the risk to NATO forces.”¹⁰⁵ The DoD emphasized that NATO allies (i.e., Canada) must gain access to interoperable technologies to minimize risk in future coalition operations.¹⁰⁶

Night vision goggles

If flying with degraded and jammed communications was risky, then flying at night without NVGs was treacherous. The United States had fielded NVGs in fixed-wing aircraft decades before, and several coalition fighters were using the latest generation goggles during the Kosovo air campaign.¹⁰⁷ In spite of attempts to field a night-vision capability prior to Operation ECHO, CF18s did not have NVG modified lighting. Canadian pilots flew lights out and “blind” for almost half of their 678 combat sorties, leading the night crews to fittingly refer to themselves as the Balkan Bats instead of the Balkan Rats.¹⁰⁸

Opinions differed greatly between the rear-echelon senior leadership and the pilots on the front line regarding the impact of this deficiency. The Commander of Task Force Aviano, Colonel Dwight Davies, expressed a high degree of confidence that CF18 pilots could conduct their missions without NVGs, and the Deputy Chief of the Defence Staff, Lieutenant-General Raymond Henault, agreed. Henault explained after the war that fielding a night vision capability was “not nearly as simple as strapping the goggles on the helmet.”¹⁰⁹ However, the Commander of the Aviano CF18 Detachment, Lieutenant-Colonel Billie Flynn, with five night-combat missions himself, called his superiors' indifference to the NVG issue “incredibly stupid and typically Canadian.”¹¹⁰ Cumbersome bureaucratic processes and

slow test and evaluation were blamed for Canada's lack of night vision capability.¹¹¹ After the war had ended, test and evaluation resumed to modify the CF18's interior and exterior lighting. The Canadian fighter force did not achieve NVG initial operational capability until eight years later, demonstrating how slow the procurement and upgrade process can be.¹¹²

Navigation system

Canadian pilots flying at night without NVGs or jam-resistant radios also had to overcome the CF18's insidious navigational drift. The inertial navigation system drifted on average 0.5 nautical miles per hour [0.9 kilometres (km) per hour] which made it very difficult to find tactical-sized targets using the targeting pod. At a range of 10 miles [16 km] the pilot's FLIR display would show approximately a quarter of a mile [0.4 km] on either side of the cockpit screen's crosshairs, making it entirely possible for the actual target to be well outside the display's field of view. The risk associated with this phenomenon was mitigated using navigation-system updates and disciplined target-search techniques. However, finding targets with this kind of navigational drift is like trying to find a star with a high powered telescope and no viewfinder. The lack of a GPS to centre aircraft sensors precisely at the target coordinates added further complexity to an already complex mission. As a result, pilots returned to base on occasion with their full complement of bombs—a frustrating outcome after fighting through enemy defences.¹¹³

FLIR pods

The lessons of DESERT STORM very clearly pointed to laser-guided bombs as the future weapon of choice for combat aircraft. A critical component of a laser-guided weapon system is the FLIR sensor with an integrated laser designator for guiding and ranging. At the start of ALLIED FORCE, Canada possessed only 13 Nitehawk FLIR pods for its fleet of more than 120 CF18s. Just six aircraft in the Balkan theatre were initially equipped with this critical piece of equipment, leaving limited pods for spare parts and training back in Canada.¹¹⁴ The fact that Canada possessed only a few pods for training new aircrew at home and did not have enough to equip all 18 aircraft in theatre limited the number of strike missions that could be conducted and the pilots' proficiency, to a degree, with the new system. As a result of a special request sent directly to USAF's Deputy Under-Secretary citing a "national emergency operational"¹¹⁵ requirement, 12 out of 18 CF18s were eventually equipped with FLIR pods. If Canada had not received extra pods from the United States, the majority of their, on average, 16 sorties per day would have been uneventful combat air patrols—a scenario similar to the one played out in the First Gulf War.

War stocks

Another critical component of a precision-guided weapon system is the weapon itself—of which Canada possessed very limited numbers. Canada's war stocks of the 500-pound [227-kilogram] guided-bomb units were exhausted within weeks of the first strikes, requiring bombs and guidance kits to also be requested in the "national emergency operational" requirement letter sent to USAF.¹¹⁶ The 2000-pound [907-kilogram] laser-guided bomb was also desperately needed to prevent multiple passes over certain targets, but at the outset of the air campaign, it had not yet been cleared for carriage and employment on the CF18. It took a great deal of effort by engineers and staff officers to develop the needed stores clearance and authorize CF18s to carry the heavier bomb.¹¹⁷ Ironically, after so much effort was made to create a PGM operational capability, the effectiveness of Canadian aircraft over Kosovo was limited by something out of anyone's control—the weather.

The weather

Laser-guided-bomb employment requires a clear line of sight between the aircraft and target for a significant amount of time. Pilots must acquire the desired point of impact and maintain an unobstructed line of sight to that point for the entire designation and guidance of the weapon. In Kosovo, more than 70 per cent of the time there was at least 50 per cent cloud cover, which made laser-guided-bomb employment on many occasions a futile endeavour. The DoD's Kosovo after action report identified GPS-guided weapons—like the joint direct attack munition (JDAM)—as the preferred weapon because of its all-weather capability.¹¹⁸ Canada did not possess a GPS weapon then and still does not today.¹¹⁹ One can only assume Canada's 70 per cent success rate would have been better with this capability.

Fighter capabilities atrophy quickly

Almost a decade after DESERT STORM, budget cuts and cumbersome procurement processes were beginning to push the CF18s precariously close to irrelevance. In 1991, the Hornet was a credible and capable platform, but eight years later, Canada still lacked jam-resistant radios, NVGs and GPS navigation systems. Hasty integration of FLIR pods and staffing of stores clearances generated a critical PGM capability in the final hour, but after the war had ended, Colonel Dwight Davies warned that “in most [similar] scenarios we would not be permitted to participate to the same extent, due to our increasingly outdated equipment.”¹²⁰ The Air Force managed to work around the “laughable” technologies in the ageing CF18 fleet, and the success of Task Force Aviano was purely a result of the professionalism and dedication of the pilots, ground crew and the support echelon.¹²¹ According to Colonel Donihee, Canada made an important contribution because of:

the vestiges of a time when we were capable of retaining greater readiness levels and overall expertise. We need to articulate the requirement for a credible fighter force and point clearly to the manner in which it is atrophying as a result of a dwindling resource base.¹²²

Senior officers were understandably frustrated by the Kosovo experience of scrambling to overcome operational deficiencies. While the government in the 1990s was giving them the political support and consensus they needed, they were not giving them the money and equipment they required.

Conclusion

When the operational plan was released for ALLIED FORCE, it was no surprise that air power was envisioned to deliver the knockout blow to Milosevic. It had proved to be an extremely effective way to shape the battlefield in DESERT STORM and had also proven to be very efficient during DELIBERATE FORCE in 1995. Canadian military planners performed their due diligence to provide the government with all of Canada's service options, but Koring noted with a degree of humour in a June 1998 *Globe and Mail* article, the proposals reflected simple interservice rivalries more than any realistic alternatives:

[The options] include sending a small infantry unit, although NATO hasn't asked for ground forces; sending a warship, although Kosovo is landlocked; and sending a handful of utility helicopters. The latter are unarmed but planners have proposed mounting a light machine gun in the door opening.¹²³

The most logical option was to send the multirole CF18 newly configured to employ the “panacea” of modern bombing—precision guided munitions. Even though the campaign took much longer than expected, its ultimate success reinforced the primacy of modern fighter aircraft in the government’s and public’s minds.

From the political perspective, Canada’s participation in the air campaign was a great success and achieved significant strategic benefits. The political and public support for Operation ECHO permitted Task Force Aviano (TFA) to execute its task without being unduly constrained, as was the case during DESERT STORM. According to Nossal and Roussel, “the Chrétien government was happy because Canada could participate in what was widely perceived to be a just cause without having to devote any serious Canadian blood or treasure to the enterprise.”¹²⁴ The authors of “Mission Ready: Canada’s Role in the Kosovo Air Campaign” concluded that “while expensive to maintain fighter forces in peacetime, it is politically much cheaper to use them in war”;¹²⁵ a concept that politicians were beginning to learn. Thus, the government achieved significant strategic benefits without suffering even a single casualty.

Canada achieved a high success rate throughout the campaign because of the dedication and professionalism of Task Force Aviano personnel; however, failure was never more than a stone’s throw away. Canada’s mission might have been jeopardized if they were not given access to the United States Air Force’s operational “grocery store” or if one of the CF18’s deficiencies resulted in the loss of the blood or treasure referred to by Nossal. If Serbia had embarked upon a communication-jamming surge, Hornets might have been politely asked to stay on the ground. Had CF18s collided with one another or another coalition aircraft because they did not have NVGs, Canadians would have demanded to know why their pilots were not equipped to safely execute their missions, and NATO would have restricted Canada to daytime-only operations. If navigational drift caused a pilot to misidentify a target, resulting in unacceptable levels of collateral damage, alliance cohesion and resolve might have faltered, undermining the entire operation. Fortunately, these hypothetical scenarios did not occur, but the CF18 deficiencies emphasized not only that the planned Hornet modernization was urgently needed but also that it was already too late.

NATO’s historical record states that by the end of May 1999, 1.5 million people (90 per cent of the population of Kosovo) had been expelled from their homes, almost a quarter of a million Kosovar men were believed to be missing and at least 5000 Kosovars had been executed.¹²⁶ While Canadian peacekeepers remained to deal with the fallout of Milosevic’s brutal campaign, the fighter force returned home and began the process of regenerating and institutionalizing the lessons learned. Their recovery period was short lived when the world was shocked by the 9/11 attacks on the World Trade Center and the Pentagon, which triggered Canada’s next major combat operation.

4. Afghanistan

The images of United Airlines Flight 175 and American Airlines Flight 11 impacting the Twin Towers will forever be engrained in the minds of those who witnessed these horrific terrorist attacks, whether in person or on television. The image of President George W. Bush patiently listening to storybook readings after his Chief of Staff Andrew Card whispered to him “America is under attack” was also difficult to endure and drew much criticism.¹²⁷ Bush was attempting to project calm amidst chaos and remained sitting for five minutes in a Florida elementary classroom while the North American Aerospace Defence Command (NORAD) and its alert fighter aircraft were literally scrambling to counter a threat they had never anticipated. The 9/11 attacks on the World Trade

Center and the Pentagon fundamentally changed the way alert fighters protect North America and marked the starting point of what the United States has called the global war on terrorism (GWOT). As an integral part of the NORAD binational command, Canadian CF18s rose to the challenge domestically in the immediate aftermath of the attacks. However, in the international military campaign which followed, where close air support has been a critical enabler, CF18s sat on the sidelines and watched while the Army, Navy and virtually every other combat-capable aircraft in the CF inventory fought, sailed and flew.¹²⁸

There were several windows of opportunity for CF18s to deploy in support of the GWOT, but with Prime Minister Jean Chrétien at first wanting to commit the minimum force necessary and with no shortage of fighter aircraft in theatre, a convincing argument could not be made for such a deployment to occur. The CDS from 2005 to 2008, General Rick Hillier, espoused the doctrine of “boots on the ground but not on the roads” which led to a larger role for the Army while the Air Force concentrated all its efforts on fielding a medium-lift helicopter capability, unmanned aerial vehicles (UAVs) and arming the CH146 Griffon. Most frontline fighter pilots have been confused by the exclusion of their community from this decade-long war, considering the strategic benefits the “pointy end” of air power achieved in the First Gulf War and in Kosovo. This section will disprove the conspiracy theories and show that a CF18 deployment might have appeased American desires for a broad coalition and demonstrated joint solidarity with Canadian soldiers on the ground, but it would not have achieved any strategic benefits for Canada.

9/11 terrorist attacks

Pre-9/11 alert duty

After the fall of the Berlin Wall, NORAD alert duty became, in a way, a distraction from the day-to-day training activities of most Canadian fighter pilots. Occasionally, Russian Tu-95H “Bear” bombers approached Canada’s northern border, compelling NORAD to scramble CF18s. The intercepts ensured that Canada’s airspace was respected, and the presence of military aircraft in the Arctic demonstrated the country’s resolve to exercise sovereignty in the far North. The missions fit neatly into traditional NORAD doctrine, which dictated aerospace threats would always come from the northern approaches.¹²⁹ However, on 24 August 1998 Canada’s first “home grown” threat to domestic airspace challenged this single axis mentality.

When a rogue weather balloon became a hazard to civilian air traffic, it quickly found itself in the gun sights of two fully armed alert fighter aircraft. Balloons and airships had been successfully attacked by First World War fighter pilots in their wood and wire biplanes, so surely shooting one down would be an easy task for the venerable CF18. However, after more than 1000 rounds were fired, with several hitting their mark, the pilots could not believe the balloon remained aloft.¹³⁰ To the embarrassment of the Air Force, Canada’s frontline fighter had failed against a technologically inferior and underpowered adversary. In fairness, the fighter community did not have established tactics, techniques and procedures or the right weapons for the mission. In the same way defence experts had never imagined the “balloon scenario,” they had also never imagined that commercial airliners would be used as guided missiles like they were on 11 September 2001.¹³¹

Post-9/11 alert duty

In the days following the 9/11 attacks, Canada’s fleet of CF18s went on an unprecedented level of alert. They were dispersed throughout Canada and readied to react within a classified, but very short, amount of time. A total of 239 civilian aircraft were denied entry into US airspace and

diverted to Canadian airports, taxing the logistic capacity of many small communities.¹³² Within hours of the attacks, CF18s had already conducted intercepts on passenger jets with reports of cabin disturbances or other credible threats.¹³³ Since then, CF18s have dutifully secured Canada's airspace and, at times, have even helped secure America's too.

When the entire American F-15 fleet was grounded in 2007, the United States asked for Canadian Hornets to fill their void. For several weeks, CF18s successfully operated out of Elmendorf Air Force Base under the control of the Alaska NORAD Region.¹³⁴ Allowing Canada to assume even a small portion of America's domestic defence was a significant demonstration of trust between nations and re-emphasized the importance of the NORAD bilateral arrangement. After 9/11, the requirement for CF18s to protect domestic airspace, infrastructure and human life regained its rightful spot at the top of the Air Force's priority list—a fact the government emphasized at every opportunity as the United States was sounding the “war horn.”

The global war on terrorism “away game”

Initial debates and Bush's coalition

The House of Commons debates for weeks after 9/11 revolved around Canada's ability (or lack thereof) to fulfill the commitments made in the “1994 White Paper on Defence.” Specifically, the white paper committed Canada to participate in “multilateral operations anywhere in the world under UN auspices, or in the defence of a NATO member state ... with a full wing of fighter aircraft and all required support.”¹³⁵ A full fighter wing consisted of 24–36 aircraft, and many opposition MPs justifiably voiced doubts whether Canada could deploy such a large contingent. They also expressed concerns regarding the interoperability of the ageing CF18 with American platforms. When directly questioned if Canada would support the war against terrorism by deploying CF18s, Minister of National Defence Art Eggleton avoided answering and instead reminded the House that Canada had put more “CF18s into the NORAD system to help in the protection of North America.”¹³⁶ Amidst pressure to reveal some type of military plan, the government kept its cards very close to its chest while discreet staff checks were feverishly underway at various headquarters. Still emotionally invested, the United States was much less guarded about its intended military response.

The Bush administration solicited support for the GWOT from several nations immediately after the 9/11 attacks. However, Operation ENDURING FREEDOM (OEF), the initial campaign “to disrupt the use of Afghanistan as a terrorist base of operations, and to attack the military capability of the Taliban regime,” was conducted by a “coalition of the willing” comprised primarily of US and UK forces.¹³⁷ Specific requests made by President Bush to other world leaders were not publicly disclosed, and US Secretary of Defense Donald Rumsfeld declined to openly discuss what was actually committed by coalition partners.¹³⁸ Both appreciated that each nation would need to reconcile their response within their own government and assert a degree of self-determination on its public disclosure. In his 7 October 2001 address to the nation, Bush simply acknowledged the pledges of future support from “other close friends” to include Canada, Australia, Germany and France.¹³⁹

Early Canadian commitments

As the first American strikes were occurring in Afghanistan on 7 October 2001, Prime Minister Chrétien publicly stated that his government would commit Air, Land and Sea assets in support of the unfolding mission. In his words, Canada would stand “shoulder to shoulder” with the United States.¹⁴⁰ The Minister of National Defence, Art Eggleton, clarified that Canada's contribution would

consist of approximately 2000 personnel. It would include a special forces (Joint Task Force Two [JTF2]) contingent, six warships with associated Sea King helicopter detachments, three Hercules, one Airbus and two Aurora aircraft.¹⁴¹ At this early stage, many believed that Canadian troops would not see front-line experience and would likely provide only backup and relief support.¹⁴² In November 2001, Chrétien, himself, stated that Canada would not participate “if there is hard fighting; if hard fighting breaks out we will leave.”¹⁴³ It would take time before the Prime Minister realized that Canada needed to both draw and shed blood in this campaign.

Although the first few months of OEF required persistent offensive air strikes, Canada’s approach was again typically defensive and cautious. Fighter aircraft, in particular, were not offered, reflecting the country’s characteristic “soft power” approach to military operations even with the media and several military analysts suggesting CF18s would be the appropriate and logical contribution. Eggleton “shot down” the fighter option, pointing out that air strikes were being conducted primarily by carrier-borne US aircraft and that land-based CF18s were not needed.¹⁴⁴ Even though the Canadian fighter force had just returned battle hardened from operations over Kosovo and could have integrated into the initial air campaign, they were also fully engaged with elevated NORAD commitments without a great deal of spare capacity.¹⁴⁵ During a meeting between the Chief of the Air Staff, Lieutenant-General Lloyd Campbell, and the Chief of Staff of USAF shortly after 9/11, the two agreed that CF18 involvement at this early stage would be extremely difficult from a logistic and basing point of view. Campbell recalled that “from the United States perspective, they were very much interested in boots on the ground,” which largely influenced Canada’s early commitments.¹⁴⁶

By December of 2001, the Canadian government remained guarded on the role that ground forces would play. It was still holding on to the idea that Operation APOLLO, Canada’s name for its initial support to OEF, would be given some type of Pearsonian peacekeeping mandate.¹⁴⁷ When United Nation Security Council (UNSC) Resolution 1386 authorized NATO to provide security in Kabul and its surrounding areas using “all necessary measures,”¹⁴⁸ Chrétien realized that shoulder-to-shoulder would actually involve standing beside and not behind Canada’s allies. On 8 January 2002, the *Globe and Mail* revealed that Canada had rejected a “passive mission” and had opted for a “combat role” within NATO’s International Security Assistance Force (ISAF). The 3rd Battalion, Princess Patricia’s Canadian Light Infantry (3 PPCLI) Battle Group would be the boots on the ground the US was pushing for. Their six-month deployment to Afghanistan was the Army’s first combat mission in nearly 50 years; when the PPCLI’s rotation was over, the Canadian government did not replace them, leaving a void in the country’s contribution.¹⁴⁹

At the beginning of 2003, Chrétien was still waiting for the UN response to the US plan for Iraq. Military leaders were forced to keep all options on the table until Chrétien officially announced that Canada would not send troops to oust Saddam Hussein.¹⁵⁰ In retrospect, Bush’s “you are either with us or against us” rhetoric made it impossible for Canada to support a coalition operation outside of its normal dependence on international alliances. Chrétien’s position was not well received by the US, and geopolitically, Canada needed to make amends by further committing to the Afghanistan theatre. The first rotation of Operation ATHENA, the Canadian name for its support to NATO’s ISAF, began in August 2003 and consisted of over 2000 personnel with associated command and support elements. With Canadian soldiers entering a dangerous war zone, the government still did not deploy CF18s to provide air cover, even though the US had requested it and basing had been secured.¹⁵¹

First request for Hornets

The Manas airbase in Kyrgyzstan, about 600 km north of Afghanistan, was activated on 21 December 2001 and was the host to several coalition aircraft.¹⁵² Though it still took two hours

for fighter/bombers to reach the heart of Afghanistan from Manas, it provided a foot in the door for countries without aircraft carriers to provide close air support to their troops on the ground. A contingent of French Mirage aircraft were based in Manas from February to October 2002 until they were replaced by 18 F-16s from Norway, Denmark and the Netherlands.¹⁵³ The three-nation air component, called the European Participating Air Forces (EPAF), agreed to just six months in theatre. A United States request to Canada in April 2003 coincided with the EPAF withdrawal and asked for 18 CF18s to replace them.¹⁵⁴ The US did not get an immediate response from Canada and, therefore, engaged Denmark and the Netherlands to extend their commitment for six more months. Norway withdrew as planned due to “personnel shortages,” leaving just 12 EPAF fighters, which reduced the level of close air support available.¹⁵⁵

The United States’ request to Canada was refused on the basis of sustainability and, surprisingly, political conjecture by the strategic military leadership. In correspondence between the Deputy Chief of Defence Staff, Vice-Admiral Greg Maddison, and the CDS, General Raymond Henault, it was suggested that a CF18 deployment should not be approved based on the \$41.6 million price tag, the shortage of precision-guided warstocks, and the strain on logistic and support elements. Although a deployment was technically feasible, Maddison suggested that the political ramifications would not be acceptable. He asserted it “would in essence be backfilling U.S. forces to allow them to force generate for other contingencies.”¹⁵⁶ The “other contingency” he referred to, of course, was the war in Iraq which Chrétien staunchly opposed. Conservative defence critic Gordon O’Connor categorized the decision as an example of the government being “more concerned about appearances than fighting the war on terrorism.”¹⁵⁷

Second request for Hornets

In late 2005, another proposal to deploy six CF18s to Afghanistan was rejected by the new CDS, General Rick Hillier.¹⁵⁸ The six aircraft identified were newly upgraded, and their integration into the operation would have been a perfect example of the joint synergies that Hillier sought to achieve in his transformation initiatives.¹⁵⁹ Nonetheless, the inability to airlift all the personnel and support equipment and the high cost were cited as reasons for rejecting another CF18 deployment. The lack of national strategic air-to-air refuelling and transport aircraft left Canada at the mercy of other countries and civilian contractors yet again.¹⁶⁰ Kicking and screaming to “get in the game,” the fighter community was beginning to grow frustrated, resulting in one senior officer using the press to get his message to the highest levels.

Fighter general stirs the pot

In April 2009, the ISAF Air Component Commander, Major-General Duff Sullivan, spoke with reporter Matthew Fisher on the subject of CF18s and Afghanistan. He was a Canadian fighter pilot with combat experience in both the First Gulf War and Bosnia, and he could not understand why, when Canadian soldiers were being killed, Canada did not have national fighter assets in theatre. He pointed out that Canada was the only nation with ground troops in theatre that had never provided close air support (CAS) aircraft. He told Fisher that senior officers from two major US combatant command headquarters had asked how they could “get Canadian F-18s into the game.” The United States’ informal queries claimed that CF18s would “relieve the pressure” on American squadrons. Sullivan contended that Hornets had not been deployed as a result of “a political decision back in Canada.” However, Defence Minister Peter McKay’s office was quick to refute the claim, stating that Sullivan was “somehow mistaken on this issue.” McKay’s office went on to say, “if the chain of command believes this is worthwhile, they would make a recommendation to

the minister.” What was now becoming very clear was that a CF18 deployment had never made it past the CDS. In the words of McKay’s staffer, it could, therefore, “hardly be a political decision.”¹⁶¹

Why Hornets did not deploy

Initial staff check

Immediately after the 9/11 attacks, staff checks were conducted by 1 Canadian Air Division to determine if CF18s could deploy in support of the GWOT. With an elevated NORAD posture, the determination was made that a “six pack” could deploy without compromising Canada’s commitment to homeland defence.¹⁶² This Air Force “menu item” was made available to the CDS for conveyance to the Minister of National Defence very early on. However, the US was initially engaged in a carrier-based and strategic-bombing campaign to which Canada could not make any measurable contributions. General Raymond Henault tabled the fighter option throughout his tenure as CDS, but according to Lieutenant-General Ken Pennie, the Chief of the Air Staff from 2003 to 2005, the Liberal Government was trying to do the absolute minimum required to appease the US.¹⁶³ A deployment of ships with Sea Kings, Hercules and Aurora aircraft as well as 750 soldiers from 3 PPCLI satisfied Chrétien’s early pledge to the US without breaking the bank or inciting public dissent.

More than enough air power

During the first few years of ISAF, there was an incredible amount of American and British air power available, making requests for fighter aircraft seem, at the strategic level, as efforts to broaden the international flavour of the coalition. According to Lieutenant-General Angus Watt, Chief of the Air Staff from 2007 to 2009, the air effort had become “too American” and the United States’ need for support was actually more a desire for international legitimacy.¹⁶⁴ Six CF18s could offer little, if any, military utility, and such a deployment would not have gained any more strategic recognition from the United States or NATO than had already been achieved. The standard reasons of cost, logistics and sustainability were provided as convenient excuses when, in fact, the Chiefs of Defence Staff, Henault and Hillier, were simply reading the pulse of the politicians and not pushing the fighter option. In the early cost-benefit analysis, CF18s were not a good “deal.”

Collateral-damage concerns

In every theatre of operation, collateral damage and friendly fire are of great concern to commanders and politicians alike. With near-real-time global news reporting, collateral damage and fratricide incidents can have far-reaching effects. One friendly fire incident which caught the attention of Canadians occurred at Tarnak Farms on 17 April 2002. That night, four Canadian soldiers were killed when a United States Air National Guard F-16 pilot disregarded orders to break off an attack and dropped a laser-guided bomb in “self defence” on a scheduled training exercise at a small-arms range. The deaths were Canada’s first in a combat theatre since Korea—made all the more tragic, they were a result of “wilful misconduct” by an American pilot.¹⁶⁵ According to the Chief of the Air Staff at the time, Lieutenant-General Lloyd Campbell, the Chrétien Government did not have a high level of ambition to begin with, and the Tarnak Farms incident “tended to colour” Afghanistan fighter operations in a negative light.¹⁶⁶ Watt also recalled that Hillier was deeply concerned that collateral damage at the hands of Canadians would undermine the Afghan government—a sentiment reiterated by the current Commander of 1 Canadian Air Division in Winnipeg.¹⁶⁷ If collateral damage discouraged Canada, it certainly did not discourage the United States from emphasizing the importance fighter operations.

Joint solidarity rejected

The resurgence of the Taliban in 2006 made it necessary for incredible amounts of CAS. The US alone would increase its annual CAS sortie count from 14,202 in 2007 to 33,679 in 2010.¹⁶⁸ As the Commander of 1 Canadian Air Division from 2007 to 2009, Lieutenant-General Marcel Duval visited Afghanistan on three separate occasions and was regularly briefed on fighter operations. He recalled a British officer stating there “was more CAS than you can shake a stick at,”¹⁶⁹ which led him to question the rationale for UK fighters being in there at all. The British officer argued that even with ample CAS available “there is something to be said about having your own.”¹⁷⁰ Lieutenant-General Watt also strongly believed if Canadian soldiers were on the ground, Canada should provide a portion of the air cover as a matter of principle. He later recalled his argument was “completely ignored” in Canada but was deeply entrenched in the doctrine of other nations.¹⁷¹

In 1995, hundreds of Dutch peacekeepers were unable to prevent the massacre of thousands of Bosnian Muslims during the infamous Srebrenica massacre. Their failure was controversial and led to the resignations of the Dutch Prime Minister and the Chief of the Army Staff.¹⁷² Many Dutch officers attribute the failure, in part, to NATO’s inability to provide air support when it was requested. As a nation, the Netherlands vowed if their soldiers were ever to be in harm’s way, their own combat aircraft would deploy to provide support and protection.¹⁷³ They maintained a contingent of F-16s in the Afghanistan theatre in parallel with the Royal Netherlands Army from 2002 until all Dutch forces returned home in 2010.¹⁷⁴ Over the last several decades, Canada has never experienced such a defining event which linked air power to an army tactical failure. One can only speculate that had Canadians died as a result of NATO air priorities or a lack of fighter aircraft then the public would have demanded to know why CF18s were not in Afghanistan to protect them. The reasons of cost, logistics and sustainability would have offered little consolation and closure to the families of the fallen.

The Manley Report

In 2007, the government commissioned the Independent Panel on Canada’s Future Role in Afghanistan to assess the situation and make recommendations which informed the 2009 decision to extend the mission.¹⁷⁵ It provided legitimate justification for Canada’s rapid procurement of the CH-47 Chinook medium-lift helicopter and the hasty modifications to its “would be” bodyguard—the CH146 Griffon helicopter. Soldiers were dying from improvised explosive devices (IEDs) in growing numbers, making roads a virtual minefield. The Chinook could transport troops and supplies within the area of operations much more safely. Six were acquired under a foreign military sales contract, and by February 2009, they were operating in Afghanistan.¹⁷⁶ The Griffon, known to be underpowered, was heavily modified to enter the ISAF pool of aircraft from which, according to Watt, Canada had drawn from “for the last few years without contributing anything.”¹⁷⁷ The Chief of the Air Staff pointed out that with Griffons in theatre, Canada would be able to “influence the pool in a different way than when you’re just a customer.”¹⁷⁸ Although the parallel argument was made for a fighter deployment, the Manley Report emphasized helicopters and unmanned aerial vehicles, putting the last nail in the coffin of a CF18 deployment in support of ISAF. After the Canadian air wing was activated in Kandahar in 2009, Lieutenant-General Watt remarked:

The Afghan mission is a balance of capabilities The balance depends on the objectives of the mission. Helicopters are the most recent addition; tanks were added in 2007 as well. Fighters are a valuable capability and have been used in the past during other missions. But, so far, they have not been called for as part of that balance of capabilities.¹⁷⁹

In the words of the current Commander of 1 Canadian Air Division, Major-General Blondin: “the requirement for helicopters far outweighed the requirement for fighters in Afghanistan.”¹⁸⁰

Conclusion

Canada like the rest of the world was shocked by the tragic, yet seminal, events which occurred on 11 September 2001. Since then, the CF18 community has shouldered the lion’s share of domestic defence while almost every other combat element in the Canadian Forces has taken part in the “away game” of the GWOT. Canada did not deploy fighter aircraft to the Afghanistan theatre because there was never a compelling need for them and the government had maximized its strategic benefits very early in the campaign. The Canadian fighter contribution was framed as a “beefed” up NORAD commitment, and although a “six pack” could have feasibly deployed at any time, the Chrétien Government was not interested for reasons of political ideology and expediency. It is evident that during General Hillier’s tenure as CDS, the Paul Martin and the Stephen Harper governments were never even offered the Hornet option. The introduction of Canadian Chinooks, Griffons and Herons into the pool of ISAF assets cost Canada a great deal of money and required an enormous level of effort from the Department of National Defence but did not appreciably increase Canada’s strategic standing among its major allies. The Chinooks, Griffons and Herons were justified based on the shortage of their respective capabilities in theatre, and more importantly, they kept boots on the ground but not on the roads. It was an accepted fact they would save Canadian lives, and although they represented the concept of joint solidarity, this concept was not used to legitimize their deployment into theatre.

During the early part of the war in Afghanistan, the government did not fully recognize the dangers Canadian soldiers would face in the post-APOLLO counter-insurgency campaign. Many senior Air Force officers were proponents of a CF18 deployment to foster a joint mentality and force solidarity. The Dutch were strong believers in this doctrine based on the lasting scars of the Srebrenica massacre, but without such scars, the strategic military leadership and Canadian politicians were unable to justify a principle-based deployment of fighter aircraft. If the First Gulf War and Kosovo were examples of low operational risk resulting in high strategic gain, Afghanistan was the exact opposite for the fighter community. It is unlikely that CF18s will ever deploy based on the principle of joint solidarity unless Canada experiences its own Srebrenica. There must be a quantifiable military need or assurances of strategic benefits.¹⁸¹

There are many who believe that the exclusion of the CF18 from OEF and then ISAF was a conspiracy so that Afghanistan would be the Army’s war. However, once the real issues are uncovered and the layers of strong personalities removed, CF18s were not needed in Afghanistan, the very same way the Army was not needed in the First Gulf War. The fighter force has used this operational pause to improve its relationship with the Army through Air–Land integration initiatives and has completed a major avionics and sensors upgrade, pushing it to the top of the fourth-generation class of fighters. The exclusion of CF18s and Canada’s loss of significant “blood and treasure” in Afghanistan will do much to reinforce the primacy of fighters to efficiently achieve strategic benefits. Canada’s current fighter operations over Libya suggest this concept continues to dominate contemporary thinking.

5. Libya

*One either believes in freedom, or one just says one believes in freedom. The Libyan people have shown by their sacrifice that they believe in it. Assisting them is a moral obligation upon those of us who profess this great ideal.*¹⁸²

– Prime Minister Stephen Harper, 18 March 2011

In February 2011, largely influenced by the successful uprisings in Tunisia and Egypt, the Libyan people began publicly demonstrating against Colonel Muammar Gaddafi's 42-year dictatorship and oppressive governance.¹⁸³ Their demonstrations were met with violent opposition by Gaddafi's military forces, resulting in a civilian death toll which by some accounts has now surpassed 30,000 people.¹⁸⁴ In Canada, politicians from all political parties voiced their abhorrence with the situation and called for the international community to take action. On 17 March 2011, the United Nations passed Resolution 1973, authorizing Member States "all necessary measures" to protect the civilian population from increasingly aggressive Gaddafi loyalists.¹⁸⁵ With legal authority and a "moral obligation," Canadian Prime Minister Stephen Harper committed a frigate, a Sea King detachment, two CC150 Polaris tankers, two CP140 Auroras and seven CF18 Hornets to help enforce embargos and a no-fly zone and to protect the Libyan people.¹⁸⁶

On very short notice, fighter aircraft from 425 Squadron deployed to Trapani, Italy, and took part in the air campaign to prevent Gaddafi from acting on his promise to "burn all of Libya."¹⁸⁷ This section will show that Canada's most recent use of CF18s in an operational theatre is another example of a consistent non-partisan policy when the UN or NATO calls for offensive action—without an appetite for placing boots on the ground. It will show that while defending Canadian airspace, the fighter community completed an extremely important modernization process, providing a ready and relevant kinetic capability well suited to operations while minimizing collateral damage. The rapid deployment of CF18s highlights the relevance of fighter aircraft to Canada's international alliance commitments and demonstrates again that low-operational-risk fighter deployments result in high strategic benefits. It was a textbook example of what a fighter force can do with the right people, equipment and political mandate.

Sequence of events

Evacuating Canadians

The most pressing concern for the government at the outset of the North African crisis was the safety of hundreds of registered Canadian nationals living in Libya who sought to flee the ensuing violence.¹⁸⁸ In the last week of February 2011, one CC177 Globemaster and two CC130J Hercules were put on standby in different European locations to transport Canadian citizens and those from other like-minded nations away from the increasingly dangerous environment.¹⁸⁹ On 1 March 2011, Prime Minister Harper also announced that the HALIFAX class frigate HMCS CHARLOTTETOWN would depart to assist with the evacuation operations already underway.¹⁹⁰ The government's number one priority was the safety of its citizens, but Harper also realized that a non-combatant evacuation operation (NEO) could easily turn into a humanitarian intervention. Besides the immediate need for transport aircraft, the Navy's high readiness and ability to operate in international waters made it again one of the first responders to provide a persistent military presence for a strategic benefit. The deployment of transport aircraft and a frigate marked the beginning of Operation MOBILE, a name well suited to the non-combatant evacuation operation theme and that ironically foreshadowed the rapidity with which Canada's fighter force responded to Harper's official announcement that CF18s would deploy.

Fighters deploy rapidly

Last night, the United Nations Security Council passed a resolution endorsing immediate action to protect Libyan citizens from the threat of further slaughter.

Canada, in cooperation with our allies and other members of the international community, worked to gain support for this resolution.

We will now take the urgent action necessary to support it.

As a consequence, the Government has authorized the deployment of CF-18 fighter jets to join the HMCS CHARLOTTETOWN in the region.¹⁹¹

– Prime Minister Stephen Harper, 18 March 2011

According to the Commander of 1 Canadian Air Division, Major-General Blondin, a contingent of CF18s and pilots were already in the breach for an Iceland air-policing mission, making it possible to immediately redirect them to the Mediterranean.¹⁹² The air-policing mission was to be conducted in the month of April, but as the Libyan situation escalated, the 425 Squadron Commanding Officer, Lieutenant-Colonel Sylvain Ménard, started to see the writing on the wall. He took it upon himself to discreetly ready eight of his aircraft and put together a list of pilots and ground crew who would be the first out the door if ordered to deploy. In the early morning hours of 17 March 2011, military commanders predicted that Resolution 1973 would not be vetoed in the UN Security Council and put Lieutenant-Colonel Ménard and his squadron on 48-hours notice to move. Because of 425 Squadron's high level of readiness, the notice to move was reduced to 24 hours by 11:45 Eastern Standard Time that day.¹⁹³ Just a few hours after Harper made his announcement, six CF18s departed Bagotville, Québec, and just three days later, Canadian Hornets conducted their first mission in support of the US-led air campaign called Operation ODYSSEY DAWN.¹⁹⁴ Four days from deployment notice to flying operational missions was an impressive accomplishment for an Air Force which had previously depended on contracted airlift and USAF air-to-air refuelling aircraft to get them anywhere. The use of the CC177 Globemaster and the CC150 Polaris air-to-air refuelling aircraft validated the importance of possessing these national capabilities, and their support to the deployment was described by Lieutenant-Colonel Ménard as "a thing of beauty."¹⁹⁵ However, the first mission could have been conducted up to two days earlier if not for delays encountered securing a suitable base and establishing communications with the combined air operations centre (CAOC).¹⁹⁶

At the outset, the Air Force expressed interest in operating out of Trapani, Italy, but had not yet received approval to do so on the day of their departure. According to Major-General Blondin, the CF18s "deployed without knowing where the target was," making a 24-hour stopover necessary in Prestwick, Scotland, while diplomatic channels were being exercised between Canada and Italy. Final authorization to operate out of Trapani was received just two hours before the CF18s landed at the Italian air base on 19 March 2011. The arrival surprised the Italian wing commander who learned of his new guests when their powerful engines roared in the "overhead break" at his airfield.¹⁹⁷ Once they arrived at Trapani, another day was required to set up the communication networks and establish a link with the combined air operations centre before they could accept any air tasking orders.¹⁹⁸

From apprehension to confidence

For the first few days of air operations, Major-General Blondin recalled he was "the most nervous he had been" during his time as the Commander of 1 Canadian Air Division. He was confident in the abilities of his pilots, but demographics and recent modifications to CF18 training had considerably reduced the overall level of experience of Canadian fighter squadrons. The Air Force's new force-generation policies had not been validated, and the initial group of aircrew was made up of a number of first-tour "pipeline" pilots. Public reports of CF18s not dropping weapons due to collateral-damage concerns confirmed that, in spite of low experience levels, Canadian aircrew were exercising a high degree of discretion and professionalism in a very sensitive operation.¹⁹⁹ The fighter detachment's

commanding officer acknowledged the decisions being delegated to the cockpit were “significant” and that, ultimately, each pilot held the responsibility to positively identify every target.²⁰⁰ After the first few days had passed, Major-General Blondin’s apprehension turned to confidence when he realized that soon he “would have the most combat experienced ‘pipeline air force’ in the world.”²⁰¹ While Canada’s pipeline fighter pilots were gaining experience on the front line, the transfer of command of the air operation to NATO provided Canada the opportunity to gain experience at the other end of the spectrum—the operational-command level.

Canadian commander

Operational commands for international campaigns of this size and complexity do not come often. In the decade-long war in Afghanistan for example, General Rick Hillier was the only Canadian who took a turn commanding the NATO-led International Security Assistance Force. When the US handed over responsibility for the entire operation in Libya to NATO, under the name UNIFIED PROTECTOR, Canadian Air Force officer Lieutenant-General Charlie Bouchard was appointed the Combined Joint Task Force Commander.²⁰² Already in a NATO command position in Naples, Italy, he was at the right place at the right time with all the qualifications to accept the challenge of leading a multinational force. Canada’s contribution to UNIFIED PROTECTOR was made that much more significant by the fact it was commanded by one of its own.

Political and public opinion

Unlike all of Canada’s major combat operations in the last 20 years, there was overwhelming political consensus regarding the country’s involvement in Libya. During the 21 March 2011 “Take Note” debate in the House of Commons, the Liberals, New Democrats and the Bloc all expressed support for Canada’s military contribution.²⁰³ Having announced their positions before Resolution 1973 was passed, it was then difficult to subsequently oppose Canadian military involvement without appearing disingenuous. On 22 February 2011, Liberal Leader Michael Ignatieff set the tone by condemning “the Libyan government’s use of violence to punish protesters for exerting their right to free speech and right to assembly.”²⁰⁴ Foreign affairs critic Bob Rae added that “[i]nternational sanctions should be mobilized right away against Mr. Qaddafi [sic]”²⁰⁵ and that “Canada should urge for the application of these sanctions immediately.”²⁰⁶ On the same day, New Democratic Party Leader Jack Layton went further and specified that the Canadian government should work “with its international partners to bring the issue to the UN Security Council and work to establish a no-fly zone in Libya’s airspace.”²⁰⁷ The Bloc Québécois was the only major political party which did not release an official statement in February, but according to news reports, it supported Harper’s position.²⁰⁸

Even former Liberal Prime Minister Paul Martin, one of several Western leaders who extended an olive branch to Gaddafi in 2004, joined the chorus of calls for the UN to act, calling the Libyan leader’s actions “despicable.”²⁰⁹ It is hard to say if party leaders anticipated that the UN, normally paralyzed by bureaucratic inertia and vetoes, would be so quick to provide the legal authority for an armed intervention or whether their outspoken opposition was merely lip service to endear the voting public on the eve of an election campaign. Regardless of their initial motives, their positions did reflect the public sentiment which was also weighted heavily towards a military intervention.²¹⁰

Lessons learned

Modernized Hornet critical

The performance of the CF18 task force is not just a validation of recent training and the professionalism of Canadian pilots; it is also a validation of recent and long overdue upgrades to

the CF18 itself. Although the CF18 community was discouraged from having never deployed to support the mission in Afghanistan, they took advantage of their decade-long hiatus to put into service upgrades and systems which have assured success in their current operations. At the time the deployment was announced, the Air Force had taken delivery of its last fully modernized aircraft and integrated a new FLIR pod which greatly enhances situational awareness, target identification and laser-guided weapons accuracy.²¹¹ The Sniper FLIR pod and the Joint Helmet Mounted Cueing System have been critical components in the fluid air campaign where pilots typically receive their target brief while airborne. NVGs have given CF18 pilots a distinctive edge under the cover of dark, while secure communications and data links have been exercised regularly.²¹²

Combat experience in a sterile environment

Although it is clear that Canadian pilots are performing well with their new sensors and under considerable pressure, it must be noted they are doing so in a low-to-medium threat environment. In early April 2011, Stanford University fellow and military historian Victor Davis Hanson categorized the Libyan air campaign as a “probable cakewalk rather than a quagmire.”²¹³ However, the Canadian commander actually flying missions over Libya challenged this position and, without going into classified detail, indicated it is not as permissive as one would think.²¹⁴ This so-called cakewalk has nonetheless afforded a very young pilot cadre the opportunity to gain valuable combat experience without facing the threats which were present in the First Gulf War in 1991 and Kosovo in 1999. The experience gained by Canada’s “pipeline air force” in this relatively sterile environment will go a long way to ensure that it retains enough practical warrior spirit to be effective in the next war, which may feature a much more competent and well-equipped adversary

CF18s punch well above their weight

As with most coalition operations, Canada’s aircraft in theatre make up only a small percentage of the forces at play; however, they typically execute a disproportionate number of missions. In just 52 days, CF18s have conducted 254 sorties which have accounted for almost 10 per cent of the strike missions conducted by coalition aircraft.²¹⁵ They have conducted strikes against ammunition storage facilities, artillery pieces, tanks, command and control headquarters, intelligence headquarters, radar sites and surface-to-air missile sites. They have even conducted strikes on Libyan forces engaged in offensive action against the rebels. They have dropped a significant number of laser-guided bombs on approved targets with an impressive success rate, and unlike previous air campaigns, not one laser-guided bomb was borrowed from the US; however, at the time of writing, stocks were starting to get critically low.²¹⁶

Collateral damage

The current operation in Libya is as sensitive to collateral damage as any other theatre including Afghanistan. As Gaddafi entrenches in his stronghold of Tripoli, it will become necessary to strike military targets in the heart of its built-up areas. Lieutenant-Colonel Ménard suggested it would be highly useful for Canada to have a GPS-guided weapon so that terminal parameters could be programmed to minimize collateral damage. It would also be useful to have a weapon with a lower explosive yield to achieve the same results. Work is being done to expedite the acquisition of these capabilities for CF18 employment in Libya, but it is not known whether they will arrive in theatre before the operation is over.²¹⁷

F-35 debate

There is no doubt the Harper government appreciated the timing of the Libyan intervention. The rapid deployment of fighter aircraft and their involvement in the bombing campaign has been used to justify the government's intent to purchase the F-35 Lightning to replace the ageing CF18 fleet.²¹⁸ Some military critics have argued the contrary by saying that such low-threat environments do not call for the high-tech systems and stealth featured in the F-35. Regardless of which side one takes, the world is trending towards Western democratic ideals. There will be popular uprisings in the future that will be repressed by the oppressors, requiring Canada to fulfill its "responsibility to protect" along with its international allies.

Conclusion

Canada's contribution to ODYSSEY DAWN and then UNIFIED PROTECTOR demonstrates the government's continued predilection for deploying fighter aircraft to achieve strategic benefits. Unlike the debates which raged during DESERT STORM in the First Gulf War, military action for ALLIED FORCE in Kosovo—and even ENDURING FREEDOM in Afghanistan—was strongly supported by the public and politicians alike. The fighter community had spent years shining their "fire trucks," so when the alarm was sounded, they surged to the scene faster than anyone ever expected. Their rapid departure was made possible by a high-readiness squadron already prepared for an operational deployment and the availability of national strategic airlift and refuelling platforms. As with most success stories, timing and luck did play a role, but they were overshadowed by readiness and relevance.

6. Conclusion

Since the mid 1980s, every combat operation endorsed by the Government of Canada, except for Afghanistan, has been supported by fighter aircraft. CF18 deployments are characterized by low operational risk with high strategic benefits and the use of fighters has been consistent, even though Hornet pilots at all rank levels have kicked and screamed to get "in the game" in Afghanistan. Two decades ago, Canada's contribution to Operation DESERT STORM was a turning point for the country which had come to identify itself as a peacekeeping nation. The cautious approach of the Mulroney Government was guided by public opinion, and although the lack of a consistent political mandate frustrated the fighter pilots flying fruitless missions over enemy territory, it provided time for the public to digest that international security sometimes requires using the pointy end of its military. The Chrétien Government later showed that the use of fighters was a non-partisan practice when the Prime Minister committed them to the Kosovo air campaign. The fact they attacked Serbian targets from the first day of the operation proves the government's previous aversions to bombing had disappeared. In Afghanistan, there was never a political appetite for CF18s because Canada had cashed in all of its strategic chips with its ground force commitment. The cost, collateral-damage risk, lack of a true need with "more than enough" aircraft, and the helicopter impetus derived from the philosophy of "boots on the ground and not on the roads" erased any chance for a CF18 deployment. Disappointed but not discouraged, the fighter community completed long overdue upgrades and exploded out of the gates for operations over Libya as soon as the government gave the green light. Each CF18 operation has been unique, and they have all provided valuable lessons that inform how Canada can keep its fighter force relevant into the next decades, regardless of what platform is being flown.

After examining the previous combat operations holistically, it becomes clear that fighter capabilities atrophy very quickly and Canadian defence procurement is poorly structured to keep pace with technology. Understandably, the “decade of darkness” of the 1990s did much to accelerate the atrophy of the fighter force; however, very clear lessons were drawn from each CF18 operation that were rarely remedied efficiently. DESERT STORM proved that PGMs would be the weapons of the future, but it took Canada almost seven years to acquire just 13 FLIR pods for over 120 aircraft. Canada was one of the only nations flying fighters in Kosovo without NVGs, and it took eight years after the air campaign to get them. Kosovo showed that all-weather GPS weapons were vital to a precision-bombing campaign, and 12 years later Canada has yet to field this capability. The recent upgrades completed on the CF18 have rectified several other notable deficiencies, and the Hornet is performing and integrating very well over Libya.²¹⁹ However, if the fighter force does not conduct continuous and comprehensive analyses regarding future weapons and capabilities, it will always be reacting to the lessons derived from the last operation rather than being fully prepared to fight in the next one.

During the counter-insurgency campaign in Afghanistan, senior officers feared that collateral damage would undermine their efforts, and therefore, the CF18s ought not to deploy. Even though this might have been a convenient excuse in the strategic “big picture” of the CF18 deployment decision, the fighter force could do or say nothing to assuage it. How can the fighter force reconcile a strategic and political aversion to collateral damage in a counter-insurgency environment where, in the case of Afghanistan, over 30,000 close air support missions are being flown by USAF alone in a year? Why does it seem like Canada is the only country who viewed this as a prohibitive outcome? How can the fighter community alleviate concerns to get a “piece of the action” without their participation undermining the campaign or inciting public dissent? The answer to these questions is beyond the scope of this paper, but there is no doubt that weapons systems must be procured to ensure suitability in an urban environment. They must be precise, and the CF should pursue the acquisition of lower-explosive-yield munitions to ensure that collateral damage can be minimized. For the fighter community to remain relevant, it must attempt to forecast and mitigate the concerns of one of its main customers—the Army. If counter-insurgency is the war of the future, then it behoves the fighter force to be proactive to ensure that it remains relevant.

In the past, CF18s had been at the mercy of contracted airlift and other nations’ air-to-air refuelling aircraft, which delayed the deployments to both Doha and Aviano. After witnessing the speed and mobility of the CF18 deployment to Trapani, Italy, the Commander of Canadian Expeditionary Forces Command and Army officer Lieutenant-General Marc Lessard admitted: “now I really love the fast air guys.”²²⁰ The recent acquisition of the CC177 Globemaster and the CC150 Polaris tanker has given Canada the capability to force project almost as quickly as a carrier battle group. CF18s were unable to deploy in four days to support the 1998 DETERMINED FALCON show of force in spite of the Minister of National Defence’s clear desire for them to do so. Today, they would have made it into theatre with time to spare, proving that national strategic airlift and air-to-air refuelling capabilities are essential. The speed with which CF18s travelled to Trapani, Italy, was so fast it outpaced the diplomacy to secure ramp space.

Governments of all political stripes have understood that deploying fighter aircraft achieves significant strategic benefits. The recent public support for the intervention in Libya is an indication that the public is also beginning to understand this concept. Canadians, it seems, are realizing what their government has known for decades: the CF is an effective instrument of “Clausewitzian”

diplomacy and Canada has a responsibility to its alliances and a responsibility to protect. It has always been less costly in political terms to deploy ships and fighters over tanks and soldiers; however, Afghanistan has shown that not every war fits this Canadian “set piece” campaign plan. The Canadian fighter force has come a long way since the CF18 conducted Canada’s first combat mission post-Korea, and it has been responsible for much of this country’s military-political international recognition since then. For Canada to retain its “seat at the international table,” it must ensure that a relevant and ready fighter force is maintained well into the future. The Canadian government and the public must continue to recognize the strategic dividend of fighters.

Abbreviations

9/11	11 September 2001
AIM	air intercept missile
CAS	close air support
CD	Canadian Forces Decoration
CDS	Chief of Defence Staff
CF	Canadian Forces
CMM	Commander of the Order of Military Merit
DoD	Department of Defense
EPAF	European Participating Air Forces
FLIR	forward looking infra-red
GPS	global positioning system
GWOT	global war on terrorism
HMCS	Her Majesty’s Canadian Ship
ISAF	International Security Assistance Force
KLA	Kosovo Liberation Army
km	kilometre
MP	Member of Parliament
NATO	North Atlantic Treaty Organization
NORAD	North American Aerospace Defence Command
NVG	night vision goggle
OEF	Operation ENDURING FREEDOM
PGM	precision guided munition

PPCLI	Princess Patricia's Canadian Light Infantry
RCAF	Royal Canadian Air Force
UHF	ultra-high frequency
UK	United Kingdom
UN	United Nations
UNPROFOR	United Nations Protection Force
US	United States
USAF	United States Air Force

Notes

1. Leslie Roberts, *There Shall Be Wings: A History of the Royal Canadian Air Force* (Toronto: Clarke, Irwin & Company Limited, 1959), 237; and Brereton Greenhous and Hugh A. Halliday, *Canada's Air Forces: 1914–1999* (Montreal: Art Global, 1999), 122.

2. For a comprehensive examination of the emphasis on fighters after the Second World War see: Bruce P. Barnes, "Fighters First': The Transition of the Royal Canadian Air Force, 1945–1952" (master's thesis, Royal Military College of Canada, 2006).

3. Canada, Department of National Defence, *1949/50 Defence White Paper*.

4. Greenhous and Halliday, *Canada's Air Forces*, 132.

5. Canada produced the Canadair Sabre and the CF100 Canuck (designed specifically for the demands of the country's geography, climate and aerospace defence mission). The CF-105 Arrow was a failed attempt to produce a state-of-the-art fighter interceptor aircraft to replace the CF100 Canuck. Canada's "mixed fleet" of jet fighters included the de Havilland Vampire (1948–58), Canadair Sabre (1950–70), CF100 Canuck (1951–81), McDonnell Banshee (1955–62), CF104 Starfighter (1961–87), CF101 Voodoo (1961–87) and CF5 Freedom Fighter (1968–95). They were all very unique aircraft with different roles and capabilities.

6. Greenhous and Halliday, *Canada's Air Forces*, 151. The CF18 was to replace the CF101 Voodoo, CF104 Starfighter and the CF5 Freedom Fighter. More on the procurement of the CF18 can be found in Lieutenant-Colonel Frank L. Boyd, "The Politics of Canadian Defence Procurement: The New Fighter Aircraft Decision" (paper, Conference on The Canadian Defence Industrial Base: Domestic and International Issues and Interests, Queen's University, 1987).

7. Joel Sokolsky, "A Seat at the Table: Canada and Its Alliances," *Armed Forces and Society* 16, no. 1 (Fall 1989): 12, 33.

8. Ibid.

9. "1991: 'Mother of all Battles' Begins," BBC, accessed July 30, 2014, http://news.bbc.co.uk/onthisday/hi/dates/stories/january/17/newsid_2530000/2530375.stm.

10. George Bush, "Iraq Invasion of Kuwait," *Vital Speeches of the Day* 56, no. 22 (September 1990): 674, accessed 11 March 2011, <http://web.ebscohost.com> (content no longer available).

11. Stan Morse, *Gulf Air War: Debrief* (London: Aerospace Publishing Ltd., 1991), 6.

12. Ibid. Encroachment on Iraqi oil supplies and excessive oil production by Kuwait and the United Arab Emirates drove down market prices.

13. UN Security Council, 2932nd Meeting, "Resolution 660 (1990) [on Iraq–Kuwait]," (S/RES/660), 2 August 1990, accessed July 30, 2014, <http://www.un.org/en/sc/documents/resolutions/1990.shtml>.

14. Jean H. Morin and Richard H. Gimblett, *Operation Friction: The Canadian Forces in the Persian Gulf* (Toronto: Dundurn Press, 1997), 18.
15. Ibid.
16. Ibid., 19, 27. The Exocet is a long-range sea- or air-launched antiship missile.
17. Ibid., 30.
18. HMCS TERRA NOVA was 31 years old at the time.
19. Canada, Department of National Defence, 1987 Defence White Paper, *Challenge and Commitment: A Defence Policy for Canada* (June 1987), 43, accessed July 30, 2014, <http://publications.gc.ca/site/eng/429765/publication.html>.
20. Ibid., 51.
21. Kevin Cox, “Hero’s Sendoff Expected as Ships Depart Halifax,” *Globe and Mail*, August 24, 1990.
22. Ibid.
23. Force reductions in Europe occurred 12 to 18 months after the First Gulf War.
24. Morin and Gimblett, *Operation Friction*, 27.
25. Lieutenant-General Fred R. Sutherland, Commander of the Order of Military Merit (CMM), Canadian Forces Decoration (CD), (Retired) telephone interview with author, April 13, 2011.
26. Morin and Gimblett, *Operation Friction*, 65.
27. Operation SCIMITAR was the name given to Canada’s deployment of CF18s to the Middle East.
28. Morin and Gimblett, *Operation Friction*, 84.
29. UN Security Council, 2963rd Meeting, “Resolution 678 (1990) [on Iraq–Kuwait],” (S/RES/678), 29 November 1990, accessed July 30, 2014, <http://www.un.org/en/sc/documents/resolutions/1990.shtml>.
30. Morin and Gimblett, *Operation Friction*, 160.
31. Ibid., 154. Sending additional CF18s and ground crew was named Operation ENOBLE.
32. Ibid., 167. The first mission was launched on this date but was aborted before CF18s pushed into Kuwait due to unsuitable weather.
33. Jinking and chaffing refer to the fighter pilot making rapid alterations of the aircraft’s flight profile and dispensing chaff; both actions are designed to degrade the ability of a surface-to-air missile system to lock on.
34. Colonel Don Matthews, Meritorious Service Medal, CD (Retired) telephone interview with author, March 22, 2011.
35. “News of the Eastern Front,” *Globe and Mail*, February 8, 1991.
36. Matthews interview.
37. Morse, *Gulf Air War*, 106; US, General Accounting Office, NSIAD-97-134, *Operation Desert Storm: Evaluation of the Air Campaign* (Washington: General Accounting Office, 1997), accessed July 30, 2014, <http://www.gao.gov/archive/1997/ns97134.pdf>; and US, Department of Defense, *Conduct of the Persian Gulf War: Final Report to Congress* (Washington: Department of Defense, 1991), 113–247, accessed April 20, 2011, <http://www.fas.org/irp/imint/docs/cpgw6/> (site discontinued).
38. Morse, *Gulf Air War*, 50.

39. Ibid., 226.
40. Ibid.
41. David N. Deere, *Desert Cats: The Canadian Fighter Squadron in the Gulf War* (Stoney Creek, Ontario: Fortress Publications, 1991), 32.
42. Ibid.
43. Commodore Larry Murray quoted in Alan Ferguson, “CF-18 Launches Missile at Iraqi Boat,” *Toronto Star*, January 31, 1991.
44. Alan Ferguson, “Canadian Urges End to ‘Sweep’ Missions,” *Toronto Star*, February 4, 1991.
45. Matthews interview; and Sutherland interview.
46. Morin and Gimblett, *Operation Friction*, 171.
47. Murray quoted in Ferguson, “Canadian Urges End.”
48. Ibid.
49. Bill McKnight quoted in Geoffrey York, “Canada Switches CF-18s to Offensive Role in Gulf,” *Globe and Mail*, February 21, 1991.
50. Sutherland interview.
51. Morin and Gimblett, *Operation Friction*, 172. The ground school covered planning air-to-ground attacks to ensure safe weapons separation and dive recovery, fuse settings, preflight inspections, attack techniques, parameters and contingencies.
52. Ibid., 174, 175; and Morse, *Gulf Air War*, 115.
53. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Oxford: Oxford University Press, 2007), 28.
54. Nicola Vulpe, “Risking a Peacekeeping Reputation,” *Globe and Mail*, August 16, 1990.
55. Ibid.
56. Robert Davis, “Canada and the Persian Gulf War” (master’s thesis, University of Windsor, 1997), 67.
57. Bill McKnight, “The Gulf War and Canada’s Defence Policy” (speech to the Conference of Defence Associations Annual General Meeting, Chateau Laurier Hotel, Ottawa, Ontario, January 25, 1991), 4.
58. Gallup Poll 009, September 2, 1990, accessed March 17, 2011, <http://search2.odesi.ca/> (content no longer available).
59. Ibid. Poll question: Do you favour or oppose the Canadian Armed Forces going to war against Iraq?
60. Morin and Gimblett, *Operation Friction*, 157–58.
61. Samuel J. Walker, “Interoperability at the Speed of Sound: Canada–United States Aerospace Cooperation ... Modernizing the CF-18 *Hornet*” (Maxwell AFB: Air Force Fellows Program Paper, 2001), 13.
62. Major Dave Stone, CD, telephone interview with author, March 18, 2011; and Colonel Matthews stated: “we assimilated Link 4 faster than I can say Jiminy Cricket,” Matthews interview.
63. Stone interview; and Matthews interview.
64. Matthews interview.
65. Morin and Gimblett, *Operation Friction*, 174.

66. Sutherland interview.
67. Ibid.
68. Matthews interview.
69. Ibid. Major Dave “Stoner” Stone also recalled it was extremely frustrating that headquarters “was not listening to common dog logic from the man [Matthews] on the ground.”
70. Morin and Gimblett, *Operation Friction*, 262.
71. United Nations, “Past Peacekeeping Operations,” accessed July 30, 2014, <http://www.un.org/en/peacekeeping/operations/past.shtml>.
72. Kim Richard Nossal and Stéphane Roussel, “Canada and the Kosovo War: The Happy Follower,” in *Allied Force or Forced Allies*, ed. Pierre Martin and Mark R. Brawley (New York: Palgrave, 2000), 185.
73. UN Security Council, 3055th Meeting, “Resolution 743 (1992) [on Socialist Federal Republic of Yugoslavia],” (S/RES/743), 21 February 1992, accessed July 30, 2014, <http://www.un.org/en/sc/documents/resolutions/1992.shtml>.
74. UN Security Council, 3191st Meeting, “Resolution 816 (1993) [on Bosnia and Herzegovina],” (S/RES/816), 31 March 1993, accessed July 30, 2014, <http://www.un.org/en/sc/documents/resolutions/1993.shtml>.
75. Ibid.
76. Larry Milberry, *Fighter Squadron: 441 Squadron from Hurricanes to Hornets* (Toronto: CANAV Books, 2003), 260.
77. “Former Yugoslavia – UNPROFOR,” United Nations, accessed July 30, 2014, http://www.un.org/en/peacekeeping/missions/past/unprof_b.htm.
78. “Operation Deliberate Force,” North Atlantic Treaty Organization Regional Headquarters Allied Forces Southern Europe, accessed April 7, 2011, <http://www.afsouth.nato.int/factsheets/DeliberateForceFactSheet.htm> (site discontinued).
79. Philip Smucker, “NATO Sure It Can Make Peace,” *Globe and Mail*, November 28, 1995. Hunter incorrectly applies the term “strategic bombing” which generally refers to targeting major industries and even civilian populations. The short bombing campaign was in actuality quite tactical. For a comprehensive paper on effects-based operations, see Colonel J. F. Cottingham, “Effects-Based Operations: An Evolving Revolution,” in *Effects-Based Approaches to Operations: Canadian Perspectives*, ed. Allan English and Howard Coombs (Ottawa: Department of National Defence, 2008).
80. Lieutenant-Colonel Jim Grecco, CD (Retired), DELIBERATE GUARD CF18 Detachment Commanding Officer, email to author, May 2, 2011; and Milberry, *Fighter Squadron*, 274.
81. Note: the *Toronto Star* and the *Globe and Mail* archives were searched to find no mention of the August–November 1997 deployment. Greenhouse and Halliday mention it in just one sentence of *Canada’s Air Force* on page 154, and Milberry devotes only one sentence in *Fighter Squadron* on page 274.
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Chapter 3 – Up in the Air: An Airship Solution for Strategic Lift?

Major Scott D. Murphy

Abstract

Despite the acquisition of four CC177 Globemaster strategic-lift aircraft in 2007 and 2008, the Canadian Forces (CF) remains challenged in providing high-volume, heavy-weight strategic lift to and from theatre. An emerging niche capability that may fill this strategic lift gap is the modern hybrid airship. While the word “airship” may evoke images of the cigar-shaped, hydrogen-filled Hindenburg Zeppelin that crashed spectacularly in 1937, modern airships are undergoing a renaissance that promises to deliver new capabilities relevant to the 21st century. In order to establish this premise, this paper examines the CF need for strategic lift, the CF *Strategic Capability Roadmap*, the strategic environment, and the operational environment. Following this review, this paper provides an overview of airship basics, airship history, modern airships, and a notional airship to be used for analysis. Current CF aerospace, joint movement, and air movement support doctrine are then used to analyse the notional airship’s inherent aerospace capabilities and air movement planning factors. Finally, this paper provides a comparison of the airship’s advantages and disadvantages in relation to conventional sealift and airlift.

This analysis suggests that modern hybrid airships show promise in providing routine, high-volume, heavy-weight strategic lift. In particular, they may be ideally suited for point-to-point delivery of over-size cargo to austere destinations. Such a capacity would complement, but not replace, conventional sealift and airlift. However, this capability is not yet viable for the CF, as it remains under development.

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1. Introduction

The year 2010 quickly proved interesting for Canada's Air Force. In the midst of providing continued support to deployed forces in Afghanistan and engaged in final preparations for the CF's support to the Vancouver Olympic Games, nearly every air wing in Canada was engaged in operations.¹ This high operational tempo increased on 12 January, when a shattering earthquake measuring 7.3 on the Richter scale struck near Port-au-Prince, Haiti. This large tremor destroyed most of that capital city's infrastructure, and some three million people were affected by the loss of basic services such as water and electricity. Canada's response was swift and decisive. The military component of the whole-of-government humanitarian response was dubbed Operation (Op) HESTIA; at its peak, more than 2000 military personnel were engaged in the mission.² By the time Op HESTIA was complete, the Air Force had airlifted nearly 5000 passengers and delivered nearly two-and-a-half million kilograms (kg) of supplies to Haiti. It did so via an air bridge established by CC177 Globemaster aircraft from Canada to an upgraded airfield at Jacmel, Haiti. This air bridge also consisted of chartered civilian aircraft, which flew their cargo to Jamaica for transfer and furtherance to Jacmel by CC130 Hercules.³ While ultimately successful, this circuitous flow of supplies to Haiti exposed a capability gap in CF strategic lift. Indeed, despite the acquisition of four CC177 strategic-lift aircraft in 2007 and 2008, the CF remains challenged in providing high-volume, heavy-weight strategic lift to and from theatre.⁴

As articulated in the *Canada First* Defence Strategy (CFDS), this movement support is critical in sustaining forces deployed to meet Canada's defence commitments at home and abroad.⁵ Standard methods involved either airlift or sealift; the former exploits the speed and range of transport aircraft, while the latter has larger carrying capacity and endurance. However, as these methods rely on airport and seaport facilities, their effectiveness and efficiency are reduced in areas with austere infrastructure.⁶ Such areas include Canada's Arctic, where vast distances and extreme weather conditions further compound these challenges.

An emerging niche capability that may fill this strategic-lift gap is the modern hybrid airship. The word "airship" may evoke images of the cigar-shaped, hydrogen-filled *Hindenburg*, which crashed spectacularly in 1937. The public consciousness seems to ignore that airships achieved a number of significant aviation and transport milestones before fading into relative obscurity. Furthermore, modern airships are undergoing a renaissance that promises to deliver new capabilities relevant to the 21st century. Indeed, development of composite materials, vectoring engines, fly-by-light technology, and revolutionary new hybrid designs have renewed commercial interest in airships.⁷ As opposed to conventional lighter-than-air airships, which relied exclusively on buoyant gases for lift, these so-called hybrid airships are slightly heavier-than-air and use an aerodynamic design and vertical thrusters in addition to helium lift. As a result, they have much greater manoeuvrability and payload capacity than legacy airships.⁸ For example, British company Hybrid Air Vehicles (HAV) advertises that its heavy-lift model *HAV 606* can carry a 200-tonne payload over 3225 nautical miles [5972.7 kilometres (km)].⁹ However, while a prototype model exists, these heavy-lift airships have yet to come to market.

This paper will argue that modern hybrid airships show promise in providing routine, high-volume, heavy-weight strategic lift but that this capability is not yet viable for the CF, as it remains under development. This argument will be developed in four sections. First, in order to help define the problem space, this paper will provide a description of strategic lift, the CF *Strategic Capability Roadmap*, the strategic environment, and the operational environment. Second, in order to help establish the possible solution space, this paper will provide an overview of airship basics, airship

development, historical milestones, the modern airship resurgence, and an introduction to the notional airship to be used for analysis. Third, in order to provide an authoritative framework for this analysis, the notional airship's capabilities and limitations will be examined from the perspective of current CF aerospace, joint movement, and air-movement-support doctrine. Finally, in order to determine the feasibility and merits of bringing airships to the strategic lift market, this paper will provide a comparison of airship's advantages and disadvantages in relation to conventional sealift and airlift. Such an approach is meant to provide a broad and fundamental understanding of modern airships and their potential to conduct strategic lift.

Undoubtedly, the idea of an airship solution to strategic-lift challenges may seem far-fetched to some. However, the growing worldwide cargo demand coupled with increasingly evident conventional transport limitations such as congestion problems and fuel efficiency gives merit to examining creative solutions.¹⁰

2. Establishing the problem space: Strategic lift

In order to assess the viability of an airship solution for CF strategic lift needs, the nature of the problem needs to be understood. This appreciation will be developed in four sections. First, in order to establish context, CF strategic lift will be defined and its capabilities and limitations explored. Second, in order to appreciate the spectrum of possible alternatives, the CF *Strategic Capability Roadmap* will be explored. Third, in order to provide perspective, the CF's security environment will be reviewed. Finally, in order to provide further perspective, strategic lift's operational environment will be described. In such a manner, a fundamental understanding of the problem space will be achieved.

Strategic lift

As defined in *Canadian Forces Aerospace Doctrine*, strategic lift missions “are those operations conducted to move personnel and materiel between theatres.”¹¹ This air-mobility capability of the Air Force Move function exploits the global reach of aerospace power. Indeed, this is a fundamentally important air-force role that can rapidly deploy and sustain a joint force so that it may generate and maintain capabilities in support of operations.¹² While this inter-theatre logistics support normally requires a combination of sealift and airlift, the latter can provide unmatched speed and reach in providing this key support function.¹³

While the Royal Canadian Navy has two auxiliary oiler replenishment ships in its fleet, each capable of providing limited logistics support, it does not have an organic sealift capacity.¹⁴ However, in addition to chartering sealift on an as-required basis, the CF has secured a full-time charter of the Polish cargo ship Motor Vessel (MV) *Wloclawek*. Based out of Montreal, this roll-on roll-off (ro-ro) cargo ship has a 1600-linear-metre cargo capacity and has supported the CF since October 2009. Under command of Canadian Operational Support Command (CANOSCOM), the MV *Wloclawek* has transported CF equipment destined for Afghanistan and in support of Op HESTIA.¹⁵ Furthermore, the planned joint support ship is intended to provide a limited sealift capability.¹⁶

With respect to airlift, the CF uses a mix of integral and chartered fleets. For example, the CF has a fleet of five CC150 Polaris aircraft, which are modified Airbus A310-300 aircraft. One aircraft is configured for very-important-person transport, one for passengers, and three for a combination of passengers and freight. Furthermore, in 2007 and 2008, the CF procured four Boeing C-17

military aircraft designated as the CC177 Globemaster III. This purchase brought an organic CF capability for strategic lift of outsize cargo such as the LAV [light armoured vehicle] III. However, bulkier and heavier explosive-resistant armoured vehicles exceed even the CC177's capabilities, and the CF has made use of chartered aircraft such as Antonov An-124s.¹⁷ However, there have been concerns about the latter's reliability and guaranteed availability, and North Atlantic Treaty Organization countries have not certified them for passenger use.¹⁸

Due to ongoing expeditionary operations, demand for strategic lift is on the rise, and 8 Wing Trenton—the home of CF air mobility—has seen a proportionally increased operational tempo. For example, 2 Air Movements Squadron processed 10.5 million pounds [4,762,719 kg] of freight in 1998; by 2007, that number had more than doubled to 24.7 million pounds [11,203,731 kg]. Given this rising demand for service in an era of fiscal restraint and environmental concerns, the CF and other air forces around the world have begun to consider unorthodox means to provide effective and efficient strategic lift.¹⁹

Strategic Capability Roadmap

Formal guidance for planning for future CF capabilities is provided by the *Strategic Capability Roadmap (SCR)*. In order to give rigour and logic to this process, the *SCR* uses capability-based planning, which involves future-security-environment analysis, concept development, scenario analysis, and deficiency and alternative identification. The product is a prioritized list of capabilities that balance capital fleet replacement with emerging technologies.²⁰

Among this list of capabilities, the *SCR* identified the following deficiency: insufficient capacity to provide routine, high-volume, heavy-weight strategic lift to and from theatre. Ranked by the *SCR* as number 272 of 319 priorities, this project is targeted for the 2019–2023 time period.²¹ As part of developing the *SCR*, the *Sustain Capability Alternative Report 2008* further amplified this deficiency. While noting that the CF has recently procured CC177 Globemaster III and CC130J Hercules aircraft and is planning a new multirole joint ship, this report identified continuing deficiencies with CF lift into theatre. Specifically, there remains a requirement to move high-volume or heavy-weight items too large to fit in a CC177, such as tanks and other armoured vehicles.²²

Developing such joint-support capabilities is one of CANOSCOM's responsibilities.²³ Indeed, CANSOCOM project staff for the CF Operational Support Capability Project have further articulated that this high-volume, heavy-weight strategic-lift capability must include the ability to operate in Arctic and austere environments that lack well-established airports and seaports. Such a capability would allow the CF to better fulfill the Government of Canada's interests at home and abroad.²⁴

The security environment

Indeed, as articulated in the *CFDS*, the CF is depended on to support the government's national-security and foreign-policy interests. This has been challenging, as the early 21st century has been defined by volatility. Recent security challenges have included terrorist attacks, ethnic and border conflicts, fragile states, global criminal networks, tensions stemming from globalization, and natural disasters. In order to formally address its responsibility for defending Canadians from such threats, the *CFDS* provided guidance for modernizing the CF by detailing clearly defined military missions and capabilities. Specifically, the government listed expectations that the CF would be able to conduct daily domestic and international operations, support a major international event in Canada, respond to a major terrorist attack, support civilian authorities during a crisis in Canada,

lead and/or conduct a major international operation for an extended period, and deploy forces in response to crises elsewhere in the world for shorter periods. In order to support this ambition, the *CFDS* revealed increased defence funding over 20 years in order to address the needs of four key military capabilities: personnel, equipment, readiness, and infrastructure. In doing so, the *CFDS* attempts to balance what the CF needs today with what it will likely need in the future.²⁵

This long-term vision prompts an understandable question: what will the future security environment be like? Published in 2009, the Chief of Force Development document *The Future Security Environment 2008–2030* addresses this very issue. This analytic document is intended to drive capability development and serve as a means to inform CF concept development. While this document does not predict future conditions, it does seek to anticipate them.²⁶

Among others, the document identified several broad trends relevant to strategic lift. Specifically, negative social and economic trends, fuelled by globalization, may increase tension and hostilities in underprivileged regions. These factors could result in humanitarian crises that call for stabilization and/or reconstruction missions. Furthermore, regional instability will also worsen due to competition for food, water, and natural resources, possibly leading to humanitarian and economic crises. In addition, the projected decline in fossil fuels, combined with rising oil prices, will force the CF to find alternative sources of power for its vehicles. In this environment, asymmetric attacks will pose the main security threat, but state-on-state conflict cannot be discounted. Therefore, the CF must be prepared to operate in a full-spectrum conflict. Finally, science and technology will continue to drive defence capabilities but will require massive investments from private and multinational companies. It will be critical for the CF to exploit technological innovations in order to maintain relevant and effective military capabilities.²⁷ Such a future security environment will challenge the military, and new capabilities and approaches will be called for in order to conduct domestic and international operations.

The operational environment

While any future strategic airlift solution would be expected to deploy globally, CF Operational Support Capability project staff made specific mention of Arctic and austere field capacities. These operating conditions, particularly in combination, are among the most demanding and dangerous in the world.²⁸

Canada's Arctic is defined by its vastness and isolation. Communities and airfields are few and far between, and the majority lack access to connecting road infrastructure.²⁹ One of the most extreme locations is Canadian Forces Station (CFS) Alert, the world's most northerly permanently inhabited settlement. Situated at latitude 82 degrees (°) North, CFS Alert spends alternating periods four-and-a-half months each of complete darkness and daylight. Temperatures are below freezing for the majority of the year, with monthly winter means of -32° Celsius (C) and summer of +2°C.³⁰ Strong winds and drifting snow can reduce visibility to zero during the winter, as can freezing fog during the spring melt. Such conditions pose significant aviation challenges, and scheduled resupply flights can be delayed for days at a time. These delays can affect the station significantly, as airlift is the only means to deliver cargo such as fresh foods and critical equipment parts. Given the likelihood of any future CF airlift capability being tasked to support this remote station, it must be capable of operating in this extreme environment.

These Arctic flight operations can carry even more risk when operating away from the safety and support of an established airfield. When operating on unprepared strips (e.g., abandoned runways, tundra, beaches, gravel bars, or sea ice) consideration must be given to flight-path obstacles, wind and sun

direction, as well landing-area size and hazards.³¹ “Reading” sea ice can be particularly challenging and requires experienced operators. Furthermore, given the lack of local weather reporting and instrument approach procedures at austere fields, crews often depart for an austere location without knowing the probability of successful visual approach and landing. This requires carrying sufficient fuel to divert to an alternate field, impacting aircraft range and/or cargo load. Indeed, while an austere capability gives an airframe great flexibility for Arctic operations, this must be balanced with the operational environment, crew experience, aircraft performance, and flight-safety considerations.³² It must be understood that austere Arctic operations do not enjoy the predictability of routine flights elsewhere in the world.

Nonetheless, the CF is expected to continue to be involved in sustain-heavy operations where normal, peacetime, commercial forms of sustainment are unavailable or impractical.³³ A review of the current and future security environment suggests that flexibility will be critical to operational success. Indeed, the CF will be expected to operate globally, conduct extended international operations, and deploy in response to crises. Furthermore, future CF capability planning has noted a deficiency in routine, high-volume, heavy-weight strategic lift to and from theatre. The operational environment for such a capability, particularly in Arctic and austere locations, will be very demanding. However, emerging aircraft such as hybrid heavy-lift, airfield-independent airships show potential to deliver this capability. The following section will explore this possible solution space.

3. Exploring the solution space: Airships

As we enter the second decade of the 21st century, it may seem counter-intuitive to consider airships as an alternative to existing strategic-lift options. Indeed, it has been almost 75 years since the *Hindenburg* disaster effectively marked the end of the airship era. The iconic newsreel footage of that historic crash, along with Herbert Morrison’s passionate live radio broadcast, shattered public faith in the airship industry. That stigma lingers today, even though the various accidents of the 1930s were as often due to weather as to intrinsic limitations of airship technology.³⁴ However, airships did not completely disappear, and recently emerging technology suggests that they may once again be relevant. In order to establish this premise, airship basics and history will be explored along with contemporary technology and developments.

Airship basics

Airships are lighter-than-air aircraft.³⁵ As opposed to heavier-than-air aircraft (such as airplanes and helicopters, which generate aerodynamic lift by moving air over a wing or rotor), airships generate aerostatic lift by filling a large cavity with a lifting gas such as helium or hydrogen. Fully steerable, airships typically use propellers or other thrust-generating devices for propulsion. However, while aerodynamic lift comes at the cost of fuel and horsepower due to induced drag, aerostatic lift only has parasitic drag. In other words, airships are highly efficient, as the engines only have to move the airship, not lift and move it.³⁶

Structurally, airships are typically constructed in one of two ways: rigid and non-rigid. With rigid airships, such as the *Hindenburg*, an envelope covers a large aluminum hull. Individual, unpressurized gas cells are lined from front to back and lift the hull by floating against it. However, due to the complexity of the structure, rigid airships are very expensive and are no longer produced.³⁷ On the other hand, non-rigid airships (such as the Goodyear Blimp) have a hull structure made of material that serves doubly as the envelope containing the lifting gas. As this requires pressurization, the stresses involved limit the non-rigid airship’s size in relation to the strength of fabric used.³⁸

Airships are further limited by their maximum operating altitude, known as pressure height. This limitation stems from the properties of gas, which expands due to decreased atmospheric pressure as the airship climbs. Rigid airships, which typically used hydrogen, vented this lifting gas to avoid pressure on the envelope. While this resulted in a loss of lift, hydrogen was cheap and easily produced on site. In contrast, non-rigid airships use rare and expensive helium, as it is less volatile. As a matter of economy, however, it is not desirable to vent this gas. In lieu, the main gas envelope includes separate small, air-filled envelopes called ballonets. Filled with ambient air at the surface, these ballonets collapse as the airship rises in order to accommodate the expanding helium. The pressure height is the altitude at which these ballonets are fully collapsed and the entire main envelope is filled with helium. This is a design compromise, as larger ballonets allow for a greater pressure height but consequently less lifting gas in the main envelope.³⁹

Another technical challenge for airships is buoyancy compensation. When taking off with neutral buoyancy, an airship's aerostatic lift is equal to its total weight, which includes the aircraft, the cargo, and the fuel. As fuel is burned en route, however, the ship gains positive buoyancy as time progresses, resulting in control difficulty. In order to create ballast en route, some airships use a complicated engine-exhaust water condenser and recovering unit, which attempts to keep the overall airship weight constant. Furthermore, when offloading cargo at destination, equivalent weight ballast and/or cargo must be uploaded simultaneously in order to maintain neutral buoyancy.⁴⁰ Clearly, while traditional airships have some advantages over conventional aircraft, they also suffer from some unconventional limitations.

Airship history

The history of lighter-than-air travel spans nearly two-and-a-half centuries, 120 years longer than heavier-than-air flight. The related aviation developments and milestones were numerous and significant, but are generally not well known. Reviewing this history will provide an appreciation of the airship's legitimacy as a long-range aircraft and speak to its potential today.

Lighter-than-air vehicles are not a new concept; in the 13th century, pioneers such as Franciscan monk Roger Bacon described the possibility of human flight using a thin-walled metal sphere filled with rarefied air or "liquid fire." In 1670, Italian Jesuit priest Francesco Lana di Terzi recorded the first design of an aerial ship. He proposed that the boat-like ship would be lifted by air-evacuated copper globes and propelled by sails. However, this hypothetical design was flawed due to structural limitations; had this vacuum ship been built, the globes would have collapsed from atmospheric pressure.⁴¹

Practical progress toward lighter-than-air travel was made in the late 1700s, when experiments with gases by scientists such as Henry Cavendish, Joseph Priestley, and Antoine Lavoisier led to several attempts to lift balloons with "inflammable air" or hydrogen. Difficulty lay in finding a suitable material for the balloon envelope; one that was light enough to facilitate lift, yet dense enough to prevent hydrogen from escaping. Building on these experiments, brothers Joseph and Étienne Montgolfier conducted a number of hot-air balloon trials, culminating in the first manned flight on 21 November 1783. Modern-day hot-air balloons (known as Montgolfières, which rely exclusively on air heated by propane burners for lift) are direct descendants of the original balloon.⁴²

Despite early optimism about balloon passenger-transport networks, their lack of steerability and ability to travel into wind made this dream impractical. In the following years, a succession of scientists, engineers, aristocrats, and fools attempted to solve this challenge. Proposed solutions included paddle wheels, flapping mechanical wings, steam jets, and even a team of harnessed eagles.⁴³

In 1774, Jean-Baptiste Meusnier, a young French Army engineer, produced the first airship design that would appear familiar today. His 260-foot-long [79.2-metre-long] dirigible was ellipsoidal, was steered horizontally and vertically with a rudder and elevator, and was propelled by three airscrew propellers. As no suitable engine yet existed, his airship had to be manually propelled using a rope and pulley mechanism connected to these screws.⁴⁴ It was not until 1851 that wealthy Frenchman Henri Giffard designed a steam engine that was light enough to be carried, yet powerful enough to propel a useful load. Incorporated into a 144-foot-long [48.2-metre-long] cigar-shaped airship, this three-horsepower [2.21-kilowatt] engine propelled Giffard on 24 September 1852 for 17 miles [27.3 km] over Paris on the first successful powered flight. With a maximum speed of 5 miles per hour (mph) [8 kilometres per hour (km/h)], however, this ship was useful in only calm winds. As a result, designers continued to pursue other propulsion means such as gas engines, steam jets, and battery-stored electrical power, albeit without meaningful success.⁴⁵

Designers eventually concluded that only the newly invented internal combustion engine provided the vital characteristics of light weight, sufficient power, and reasonable safety.⁴⁶ Using a gasoline-powered, single-cylinder, two-horsepower [1.47-kilowatt] engine built by Gottlieb Daimler, German inventor Karl Wölfert successfully flew an airship for nearly 3 miles [4.8 km] in 1888. Further collaboration culminated in a disastrous demonstration flight on 12 June 1897, when the fuel tank exploded and engulfed the ship in flames, resulting in a crash that killed its crew. While this disaster put airships out of public favour for several years, interest was rekindled in 1901, when wealthy Brazilian Alberto Santos-Dumont won the la Meurthe prize for flying from the Aéro Club de France at St Cloud to the Eiffel Tower and back in under half an hour. Known as “le petit Santos,” he captured public imagination with his numerous stunts and demonstrations over Paris. Furthermore, he wrote predictions that there would someday be luxury-cruise airships, flights over the North Pole, and huge transport airships that would carry hundreds of passengers and tonnes of cargo around the world. However, Santos was not able to pursue these goals, as he was forced to retire from aviation in 1910 due to failing health caused by multiple sclerosis.⁴⁷

That same year marked the first passenger flight by the *Deutsche Luftschiffahrts-Aktiengesellschaft* (the German Airship Transport Company, known by its acronym DELAG). Founded in 1909 by Count Ferdinand von Zeppelin, DELAG was the world's first passenger-transport airline. Zeppelin had first experienced being airborne in 1863, when he had travelled to the United States (US) as German military observer of the American Civil War. His interest was further piqued when he witnessed hundreds of successful balloon flights transporting mail during the 1870 siege of Paris. Upon retiring as a brigadier-general in 1890, he was finally able to pursue this interest in a serious manner. His experiments led to the development and the perfection of the rigid airship, whose generic name has become synonymous with his own: the Zeppelin.⁴⁸

Unlike the previous non-rigid airships, the rigid Zeppelins maintained their form in all wind conditions, which minimized the chance of a catastrophic leak of lifting gas. Furthermore, rigid airships could be much larger than non-rigid ones, allowing them to mount larger engines and carry heavier loads. Zeppelin's successive design evolutions improved performance and reliability; however, ground-handling challenges were never fully overcome. Indeed, rigid airships remained buoyant after landing and required either large ground-handling teams to carry them to large hangars or a mooring mast to which they could be tethered. Even with these measures, airships were often damaged (or even destroyed) while moored in poor weather. Nevertheless, DELAG enjoyed an enviable safety and performance record. From its founding to the outset of the First World War, more than 30,000 passengers flew 107,000 incident-free miles [172,200 km] over Germany during

1588 flights.⁴⁹ This consistency was remarkable, particularly in a time when other nations had but nascent airship capabilities and the thought of passenger airplanes was but wishful thinking.

At the outbreak of the First World War, only Germany, Great Britain, and France had an airship capability.⁵⁰ While the British used their airships in a maritime reconnaissance role, the German and French used airships to conduct reconnaissance missions and tactical bombing missions in support of their land forces. However, their vulnerability to ground fire became quickly evident; unable to fly much above 6000 feet [1828 metres], the large airships were easy targets for small-arms and artillery fire when flying daylight tactical missions. In response, the German High Command began a shift in airship operations from over the Western Front to the skies over England; this decision marked the beginning of the first strategic-bombing campaign.⁵¹ By 1916, Zeppelins could fly as high as 20,000 feet [6096 metres] but remained vulnerable to newly introduced night-fighter squadrons using incendiary bullets. Furthermore, crew exposure to hypoxia and extreme cold temperatures at these altitudes resulted in loss of judgment and performance that reduced mission effectiveness.⁵² A series of failed raids culminated on the night of 19 October 1917, when five of the newest Zeppelins were lost during a raid against London. Although sporadic and limited raids carried on until August 1918, this defeat effectively ended the strategic bombing campaign.⁵³

Perhaps the greatest Zeppelin feat of the war occurred in a very different theatre of war and did not involve bombing.⁵⁴ In November 1917, German troops stationed in German East Africa, now a part of Tanzania, were being pressed by British Forces and were in desperate need of replenishment. With no other means to deliver the needed material, a Zeppelin was tasked with the desperate resupply mission. The 3600-mile [5793.6-km] direct flight was unprecedented, and modifications were made to an airship already in production in order to create the largest airship yet built: the 743-foot-long [226.4-metre-long] Zeppelin *LZ-59*. Since there were no fuel or hydrogen reserves at destination, no return flight was expected. On 21 November 1917, *LZ-59* launched from Bulgaria with 14 tons [12.7 tonnes] of medical supplies and weapons aboard. Guided by celestial navigation, the ship successfully crossed the Mediterranean and the Libyan desert. The crew was only 400 miles [643.7 km] from their destination when they were ordered by radio to turn back, as the German admiralty had received intelligence (that was faulty) that the German positions had been overtaken. Disappointed, the crew landed in Turkey, having covered 4225 miles [6799.4 km] during a 95-hour non-stop flight. Notably, there was enough fuel in the tanks for an additional 64 hours of flight (or approximately 3800 miles [6115.5 km]). Had the crew headed west instead of south on their journey, this range would have taken them as far as San Francisco.⁵⁵ Notably, it would be 30 years before any airplane could have accomplished the same feat.⁵⁶ While the mission itself was a failure, it demonstrated the rigid airship's potential to deliver cargo between continents.

Following the Great War, however, this potential for intercontinental transport was slow to develop. As per the provisions of the Treaty of Versailles, Germany was prohibited from maintaining military air forces and also faced restrictions on its civilian aircraft industry. While the Allies seized existing airships, many nations that acquired these assets, such as France, saw these fleets quickly dwindle due to operational losses and were not prepared to invest resources to further develop the capability.⁵⁷

As an exception to this reluctance, the British Air Ministry used a Zeppelin design to develop an airship capable of transatlantic crossing. On 2 July 1919, the *R-34* launched from Scotland bound for Roosevelt Field, New York. Some 108 hours later it landed, with only fumes of fuel remaining, having completed the first ever east-west Atlantic crossing and having established a new endurance record. This flight occurred only two weeks after the first successful west-east Atlantic crossing, completed by

Alcock and Brown in a modified Vickers Vimy bomber. The relative ease of *R-34*'s crossing (including the return flight) in comparison to Vimy's crash landing on arrival in Ireland gave confidence to the British airship industry. However, British airship interest collapsed in 1921 following the loss of the ambitious successor *R-38* along with 44 of its 49 crew during its inception trials.⁵⁸

The US was also interested in developing rigid airships. In lieu of demanding financial war reparations from Germany, it commissioned a new Zeppelin airship for American use. Completed in 1924, the *LZ-126* was re-christened the *Los Angeles* and served with the US Navy for eight years in a variety of research and operational roles before being withdrawn from service. The year 1924 also saw the launch of the American-built *Shenandoah*, the first helium-inflated airship. Notably, helium was quite rare at the time, and there was only enough of the gas available for the Navy to inflate one ship at a time. Nonetheless, the *Shenandoah* completed a round-trip of North America and spurred interest in attempting the first overflight of the North Pole. However, on 2 September 1924, the *Shenandoah* was destroyed in a thunderstorm, crushing hopes for an American polar expedition.⁵⁹

Nonetheless, the fascination with polar flight was not limited to the US. Famed Norwegian explorer Roald Amundsen, who had been the first to reach the South Pole in 1912, had already made unsuccessful attempts to reach the North Pole by ship and by flying boat. Undeterred, Amundsen purchased a semi-rigid airship named *Norge*, which was designed, built, and operated by Italian Colonel Umberto Nobile. Racing against American Commander Richard Byrd and his Fokker monoplane, the expedition left Italy on 10 April 1926. The two expeditions met in the Svalbard Archipelago on 7 May at King's Bay, Spitzbergen. Two days later, Byrd launched and returned after a 16-hour flight, claiming to have reached the Pole. This claim has subsequently been disputed due to the lack of range of his aircraft, and Amundsen and Nobile are now recognized as having been the first to reach the Pole on 12 May 1926.⁶⁰

Further airship milestones would soon follow, as the greatest airship to be built was nearing completion.⁶¹ On 8 July 1928, Von Zeppelin's daughter christened the *LZ-127 Graf Zeppelin*. At 775 feet [232.2 metres] in length, 100 feet [30.4 metres] in diameter, and some 3,700,000 cubic feet [104,727.3 cubic metres] in volume, it was the largest airship that had ever been built. Appointed with a fully equipped kitchen, a luxurious dining saloon, and two-berth staterooms, the *Graf Zeppelin* was designed to transport passengers in a comfort and style unparalleled in its day. Driven by five powerful engines, it could cruise at 73 mph [117.4 km/h]. Notably, these engines were fed with Blaugas, a gaseous fuel with nearly the same weight as air. As a result, it was no longer necessary to release hydrogen to compensate for weight loss due to fuel burn, extending the airship's range by a third.⁶² Indeed, on its first flight to North America, the *Graf Zeppelin* broke the flight distance record by covering 6200 miles [9978 km] non-stop. Notably, this was also the first intercontinental passenger-airship flight. In an effort to raise money to fund fleet expansion, a series of spectacular demonstration flights followed, culminating in an attempt to fly around the world. Backed by American financing, the *Graf Zeppelin* left Lakehurst, New Jersey, on 7 August 1929. Some 21 days, 30,000 miles [48,280 km], and four fuel stops later, the circumnavigation had been completed at an average speed of 70.7 mph [113.7 km/h]. Furthermore, in addition to a polar expedition research flight and two trips to the Middle East, the *Graf Zeppelin* conducted passenger flights between Germany and Brazil. During its service life, it flew 590 flights, made 144 ocean crossings, and carried 13,100 passengers with a perfect safety record.⁶³

However, the *Graf Zeppelin* was permanently grounded in 1937 due to the spectacular crash of its sister ship, the *Hindenburg*. Completed in May 1936, the *Hindenburg* set a new standard in terms of size, speed, safety, comfort, and economy.⁶⁴ With a 50-passenger capacity, it had an 11,000-mile [17,702-km] range at a cruising speed of 84 mph [135 km/h]. While designed to fly with helium, the

7,000,000-cubic-foot [1,982,217-cubic-metre] ship had to be filled with hydrogen due to the refusal of the United States to export the extremely rare helium to Germany.⁶⁵ Nonetheless, the *Hindenburg* made 17 successful round trips to the US and Brazil before its final, fateful flight. It was scheduled to make 18 further flights to the United States that year, and the *Graf Zeppelin* another 20 round trips to Brazil. Work on the next airship, the *LZ-130 Graf Zeppelin II*, was underway, and the Zeppelin company appeared poised for stable commercial success.⁶⁶ That hope crashed along with the *Hindenburg* on 6 May 1937 at Lakehurst, New Jersey. As thunderstorms approached, the crew dropped lines to the ground to prepare for mooring. The landing was proceeding normally when a flash of fire burst in one of the aft cells and quickly spread to the rest of the ship. Within 32 seconds, the ship dropped to the ground from a height of 75 feet [22.8 metres] and was engulfed in a fire that continued to burn for 3 hours. Incredibly, 62 of the 97 people on board survived the highly publicized disaster.⁶⁷

Among all airship crashes, the *Hindenburg's* was the most mysterious and contentious. It rivaled the *Titanic* with the feeling of horror and awe that it evoked; each vessel's name itself is synonymous with its disaster. Indeed, Herbert Morrison's cry, "Oh the humanity!" during his eyewitness radio report, was one of the most famous moments in broadcasting.⁶⁸ Theories as to the crash's cause included a gas leak sparked by static electricity, venting gas sparked by a snapped wire, and sabotage by either an explosive device or incendiary bullet. While the weight of evidence at the board of enquiry suggested that the accident was the result of a freak set of circumstances, the dramatic sabotage theory could not be disproved and seemed plausible in the anti-German sentiment of the time. Whatever the cause, the *Hindenburg* crash marked the end of intercontinental flights by hydrogen-filled airships.⁶⁹

Indeed, heavier-than-air jet aircraft came to dominate the skies following the Second World War. Rigid airships no longer existed, and blimps were relegated to primarily advertising and sight-seeing roles.⁷⁰ So long as no urgent need for an alternative to heavier-than-air passenger and cargo transport could be identified, airships remained on the periphery. Despite this marginalization, a number of ambitious developers believed that airships could establish a cargo-carrying niche.⁷¹

During the 1970s and 1980s, companies from Britain and the US produced designs capable of carrying up to 500-tonne payloads. However, these companies failed to secure sufficient commercial funding, and the designs withered on the vine. During this time, military funding was similarly insufficient to convert hypothetical designs into operational aircraft. For example, in 1987 the US Navy awarded study contracts to Boeing Military Airplane Division, Goodyear Aerospace Corporation, and Westinghouse Defence Electronics System Corp. to develop a surveillance and reconnaissance blimp for the Navy Airship Program. However, the programme was terminated in 1995 due to severe funding restrictions.⁷²

A theme emerges from this review of airship development: despite enthusiasm inspired by technological promises, airships never fully established themselves commercially. This stigma has lingered and has hampered investor confidence.⁷³ Indeed, despite achieving a number of significant aviation milestones, airships have been unjustly characterized as "a tragic detour in the history of transportation."⁷⁴

Modern airships

Nonetheless, fuelled by a growing demand for air cargo, the early 21st century saw a resurgence of interest in airship use.⁷⁵ Furthermore, technological advances such as fly-by-light technology, composite materials, vectoring engines, and computer-assisted design, promised to set the stage for the comeback of airships.⁷⁶ As opposed to prior airships, however, this latest generation of vehicles

combines both heavier-than-air and lighter-than-air technology. Indeed, traditional aerostatic lift is combined with aerodynamic lift derived from an airfoil-like envelope and vertical thrusters. As a result, such aircraft can gain as much as 40 per cent of their lift aerodynamically; this additional lift source provides so-called hybrid airships with an increased load capacity and/or enhanced endurance.⁷⁷ Furthermore, hybrid airship designs feature buoyancy management systems that balance aerodynamic and aerostatic lift. As fuel is burned during flight, the nose of the hybrid airship is proportionally lowered using ballonet trim. Due to the airship's airfoil-shaped envelope, this causes the aerodynamic lift to decrease in balance with the reduced weight of the aircraft. Due to this elegant design, hybrid airships will be slightly heavy when landing and will not require ballast, since the aerostatic lift will be insufficient to lift it airborne. There is a performance cost, however, as this design also prevents hybrid airships from vertical take-offs.⁷⁸

Despite these advances that propose to address conventional airship limitations, hybrid airships are not yet available for purchase. In recent years, several manufacturers have designed and tested prototypes; a review of these efforts reveals that challenges remain in successfully bringing airships to the market.

Indeed, since the turn of the century, a number of companies have attempted to produce hybrid airships. In 2000, British company Advanced Technology Group (ATG) flew the first hybrid airship prototype, the *Skykitten*. The full-scale model, known as *Skycat*, was to have three variants capable of carrying 20, 50, or 200 tonnes. The largest model was designed with a cruise speed of 80 knots [148.1 km/h] and a 3250-nautical-mile [6019-km] range. Designed to take off from any reasonably flat terrain, including water, without the need for runways, hangars, or ground crew, the *Skycat* was marketed as the ideal air-cargo vehicle for transporting cargo long distances to remote locations.⁷⁹ However, while production was scheduled for 2008, ATG went bankrupt in 2005.⁸⁰

In 2004, the US Department of Defense Advanced Research Projects Agency sponsored one of the most ambitious heavy-lift airship projects ever. The Walrus HULA (Hybrid Ultra-Large Aircraft) project studied the feasibility of carrying 500–1000 tons [453–907 tonnes] over a distance of roughly 22,000 km without the need for ballast or ground-handling equipment. Lockheed Martin Corporation and Aeros Aeronautical Systems were each granted approximately 3 million US dollars [3.98 million Canadian dollars (CAN\$3.98 million)] to develop a design concept.⁸¹ The winning design team was to have built a demonstration prototype; however, funding for the program was cancelled in 2006.⁸²

Furthermore, in 2006, Lockheed Martin also tested a secretive hybrid airship known as *P-791*. Believed to be a heavy-lift airship, this project was part of a development project by the Skunk Works.⁸³ Capable of taking off and landing within 360 metres, 20-, 50-, and 500-ton [18.1-, 45.3-, and 453-tonne] capacity models were planned. However, the *P-791* and *Skykitten* appeared similar in design, and a lengthy legal battle ensued. That issue now settled, Lockheed Martin is reported to be ready to build prototypes for the two smaller versions, with the largest version still in final design.⁸⁴

In 2008, Canadian-based Skyhook International teamed with Boeing to develop a hybrid airship for tactical airlift. The Skyhook Jess Heavy Lifter (JHL) design combined a neutrally buoyant airship with four Chinook helicopter rotors. Designed to carry a 40-ton [36.2-tonne] slung payload over 200 miles [321.8 km], the JHL-40 airship was targeted for sale to the northern oil industry in order to carry heavy equipment to remote sites inaccessible by road.⁸⁵ Design hurdles have been surpassed, and the cost for developing a prototype was estimated at \$200–\$250 million. As of summer 2010, reluctant credit markets and unsupportive governments have stalled the project, and production has been pushed back at least three years to 2015.⁸⁶

The current leading-edge developer is the previously mentioned British company Hybrid Air Vehicles, which arose from the defunct ATG. HAV is currently developing persistent surveillance and heavy-lift logistics airships. Their 1/6th-scale prototype, dubbed *HAV3* and based on the *Skykitten*, has flown successfully, and three production models are under development. Each model incorporates recent technology developments such as hover cushion landing system, vectored thrust for take-off and landing, and lifting body-hull design. The largest proposed model, the *HAV 606*, has a payload of 200 tons [181.4 tonnes] with a ro-ro cargo ramp, a range of 3225 nautical miles [5972 km], a cruise speed of 75 knots [138.9 km/h], and a pressure ceiling of 9000 feet [2743 metres]. Furthermore, “crane-type” operations capable of a 90-tonne vertical lift are advertised.⁸⁷ An even larger 1000-tonne vehicle has been proposed but has not yet been fully developed due to envelope material limitations; such a vehicle offers even greater potential for future strategic lift.

A notional airship

Despite intensive design and marketing, such full-scale hybrid airships remain speculative only. However, given the *HAV 606*'s status as the only design under development that matches the CANOSCOM project staff requirements, its characteristics will be used for the purpose of analysing the viability of an airship solution for strategic lift. While this notional airship remains under development, the sub-scale prototype vehicle has made 22 flights as of mid-2009.⁸⁸ Furthermore, Hybrid Air Vehicles (partnered with Northrop Grumman) has won a \$517-million contract for the US Army Long-Endurance Multi-Intelligence Vehicle (LEMV), slated for deployment to Afghanistan in early 2012.⁸⁹ Should the LEMV succeed, this may bring much-needed legitimacy to hybrid airships and could possibly help the heavy-lift variant to market. Given that there are no known viable competitors at this time, this paper will use the *HAV 606* as the basis for a notional heavy-lift airship to be used for this feasibility analysis. A summary of its principal data and design features is provided in Table 1.

Characteristic	Specification
Envelope volume	457,500 cubic metres
Payload	200 tonnes
Length	185 metres
Width	77 metres
Height	47 metres
Range	3225 nautical miles [5972 km]
Pressure altitude	2745 metres
Payload deck length	49.4 metres
Payload deck width	7.5 metres
Payload deck height	5.0 metres
Cruise speed	75 knots true air speed [139 km/h]
Maximum speed	90 knots true air speed [167 km/h]

Characteristic	Specification
Envelope	Laminated fabric construction hull with internal catenary system supporting the payload module. The hull's aerodynamic shape, an elliptical cross section allied to a cambered longitudinal shape, provides up to 40 per cent of the vehicle's lifting needs. The internal diaphragms required to support this shape allow for a limited amount of compartmentalization, further enhancing the fail-safe nature of the vehicle. Pressure control is provided by multiple ballonets located fore and aft in each of the hulls.
Landing system	Hover skirts on the underside of the two outer hulls provide an amphibious capability with an enhanced (compared to conventional airships) ground-handling ability. Hover skirts are "sucked in" for a clean in-flight profile and enhanced all-round visibility. System shares use of ballonet fans with hull pressure system.
Power plant	Four x 8000 shaft horsepower [5965.6 kilowatts at the rotor head] (6000 shaft horsepower [4474.2 kilowatts at the rotor head] maximum continuous) turboprop gas turbines. An engine within each stern duct drives a propeller. An engine is configured forward on either side of the hull also within a duct. The forward engines are for ground handling and take-off. All four ducts are configured with blown vanes to allow vectored thrust for take-off, landing, and ground-handling operation.
Payload module	Located on centre line to provide ro-ro capability. Primary features: flight deck forward on centre line above the forward cargo ramp; flight deck provides side-by-side pilot stations along with 200 square feet [18.5 square metres] of accommodation for off-duty crew members; main load deck provides clear space for cargo/freight on a military-rated floor structure; mezzanine decking can be provided to give multiple lower load area; rear cargo ramp provides ro-ro access to load deck; above-door aperture is a further 400 square feet [37.1 square metres] of accommodation space. Crane-type operations with a lift capacity of up to 90 tonnes vertically.
Flight controls	Dual-channel, optically signed, flight-control system.

Table 1. Notional airship: Principal data and design⁹⁰

As the historical record revealed, airships achieved a number of significant milestones and competed with heavier-than-air aircraft for several decades. From the first manned flight by the Montgolfier brothers in 1783, to the first passenger airline in 1909, to the first round-trip trans-Atlantic flight in 1919, to the first polar overflight in 1926, to the first circumnavigation of the world in 1929, lighter-than-air vehicles have been at the vanguard of aviation. Despite the cultural memories of the *Hindenburg* disaster, lighter-than-air travel has nonetheless enjoyed an enviable safety record. While the dawn of the jet-engine age marked the decline of airships, modern hybrid technology and increasing need for heavy-lift transport have opened the field once again. While manufacturers have faced financial challenges in bringing airships to market, they offer great potential. The *HAV 606* hybrid airship has been submitted as the basis of a notional airship used for analysis. However, any conclusions drawn will have to be verified once a production model is ready for operational use. Nonetheless, in order to determine the airship's theoretical effectiveness for military strategic lift, the following section will examine this potential from a doctrinal perspective.

4. Airship suitability: Doctrinal perspective

According to the Canadian Forces Joint Publication A1, *Doctrine Development Manual*, military doctrine “represents the distilled insights and wisdom gained from experience.”⁹¹ Furthermore, the *Canadian Forces Aerospace Doctrine* manual states that doctrine is “instrumental in establishing priorities and acts as a critical sounding board for testing and evaluating new concepts and policies.”⁹² Therefore, using a doctrinal framework to assess the viability of an airship solution to strategic airlift will allow for a critical evaluation based on an authoritative foundation. This examination will be developed in three subsections. The first of these will use the recently revised *Canadian Forces Aerospace Doctrine* to assess the notional airship’s strengths and weaknesses as a generic aerospace vehicle. The second subsection will use *Joint Movement Support* to assess how the use of airships could affect the flow of personnel, equipment, and goods. The third subsection will use *Movement Support Air* doctrine to examine how the notional airship’s strengths and weaknesses affect airlift planning. Such a balanced doctrinal approach aims to provide a fundamental appreciation of the airship’s military utility.

Canadian Forces Aerospace Doctrine

The *Canadian Forces Aerospace Doctrine* manual establishes the framework for the effective use of aerospace forces. Within this framework, strategic lift forms a part of air mobility and, therefore, falls under the Air Force Move function. This function results in the deployment and positioning of personnel and materiel in order to achieve desired effects. Indeed, strategic airlift allows a joint task force to deploy, maintain, and regenerate its capabilities in support of operations.⁹³ While strategic airlift and force sustainment are not glamorous military activities, they are critical capabilities that enable operational success. This importance is captured in the military cliché: “amateurs talk tactics; professionals talk logistics.”⁹⁴

For optimal use of aerospace forces, an understanding of the following basic doctrinal characteristics of air power is required: elevation, fragility, impermanence, payload, precision, reach, sensitivity to environmental conditions, sensitivity to technology, speed, stealth, and support dependency.⁹⁵ In order to achieve this understanding, each of these characteristics will be examined in turn as they apply to the notional airship and assessed as being strong, moderate, or weak.

Elevation

The ability for aerospace vehicles to operate above the Earth’s surface provides the ability to observe and influence activities on the surface and below the sea. Within the framework of Air Force functions, this characteristic applies primarily to the Sense function and the Shape subfunction. However, airships engaged in strategic lift could conceivably have integrated surveillance sensors that allow them to fulfill multiple functions concurrently. This potential flexibility means that elevation may indeed be pertinent to a heavy-lift airship.

Conventional airships were typically low-altitude vehicles, seldom operating above 3000 feet [914 metres] unless forced higher by military or navigational necessity.⁹⁶ In contrast, hybrid airships can operate higher, as they are buoyed by both aerodynamic lift from their envelope shape and by buoyant lift from helium. More specifically, the notional airship has a pressure altitude of 9000 feet [2743 metres].⁹⁷ Notably, this elevation is much lower than fixed-wing aircraft and specialized high-altitude airships. Therefore, the notional heavy-lift airship is only moderately able to exploit elevation.

Fragility

As compared to surface vehicles, aerospace vehicles tend to be more fragile and require special handling to keep them operational.⁹⁸ With computer-assisted design and modern materials, however, modern air vehicles are less affected by catastrophic design and construction failures than their predecessors. However, they remain vulnerable to equipment failure and to enemy air defences.⁹⁹

Fuelled by the graphic images of the *Hindenburg* disaster and of popping balloons, there is an unfounded myth about the fragility of airships.¹⁰⁰ However, nearly two-thirds of the *Hindenburg's* passengers survived—a survival rate that would be highly unlikely today for any exploding jet airliner.¹⁰¹ Furthermore, a number of technological developments have enhanced modern airship safety. For example, the use of inert helium has reduced the chance of explosion, and new envelope materials make airships lighter and more robust.¹⁰²

Nonetheless, airships are large, relatively slow-moving vehicles that are susceptible to ground fire.¹⁰³ However, unlike a child's balloon that holds air at high pressure, airships hold helium at a very low pressure. As a result, holes result in slow leaks as opposed to catastrophic failures. Feasibility studies indicate that a large airship could sustain thousands of holes from small arms fire and still be able to operate for a number of hours.¹⁰⁴ This theory is supported by the 1998 example of the rogue 80-metre-high weather balloon that drifted across the North Atlantic, surviving more than 1000 cannon shells being fired at it by CF18 fighter aircraft.¹⁰⁵ Furthermore, vulnerability trials established that a surface-to air missile would pass through the envelope, leaving relatively small holes that would take three-and-a-half hours to deflate the vehicle.¹⁰⁶

However, engineering studies indicate vulnerability in the crew cabin, engines, and cargo compartments.¹⁰⁷ Heat signatures from the engine could attract man-portable air defence system (MANPADS) fire, although the loss of one or two engines of eight 8000-horsepower [5965.6-kilowatt] engines would only degrade performance and not “kill” the airship outright.¹⁰⁸ However, barring the use of armour, hazardous items in the cargo compartment remain vulnerable to fire or explosion caused by explosive or incendiary rounds. Similarly, the crew compartment is vulnerable to ground-based fire unless armour protection such as Kevlar is installed.¹⁰⁹

While vulnerable to sustaining battle damage, the survivability of the notional airship is higher than other aircraft due to the smaller likelihood of explosion and the greater ability to conduct low-speed, off-airfield forced landings.¹¹⁰ Therefore, the notional modern airship is deemed moderately fragile.

Impermanence

Another aircraft characteristic is impermanence. Aerospace platforms cannot stay aloft indefinitely; however, this limitation may be offset by rotating a number of platforms in order to maintain a posture of relative permanence, or by repeating missions as needed. The notional airship has a published endurance of 43 hours, which significantly exceeds that of fixed- and rotary-wing aircraft. Greater endurance is certainly possible, as current efforts to integrate thin-membrane solar collectors into the upper envelope promise to increase an airship's power supply even further.¹¹¹ Therefore, notional heavy-lift airships have moderate aerospace endurance.

Payload

Compared to maritime and land vehicles, aerospace vehicle payloads are limited. However, due to faster speed, this constraint may be offset by a high sortie rate. Furthermore, a smaller payload of critical equipment (such as ammunition or medical supplies) delivered quickly may contribute to mission success more effectively than a larger payload delivered later.

However, heavy-lift airships promise to deliver payloads that exceed those of all other aircraft, not only in terms of absolute volume but also in terms of cargo size.¹¹² For example, the CC177 Globemaster has a maximum payload of 75 tons [68 tonnes] that must fit in a compartment measuring 18-feet [5.49-metres] wide by 68.2-feet [20.78-metres] long, by 12.3 feet [3.76 metres] under the wing.¹¹³ In contrast, the notional airship design allows for a cargo of 200 tons [181.4 tonnes] in a compartment measuring 25-feet (7.5-metres) wide, 162-feet (49.4-metres) long, and 16.5-feet (5.0-metres) high. This calculates to roughly two-and-one-half times the weight, and four-and-one-half times the volume, in favour of the notional airship. In addition to providing a ro-ro capability on a military-rated floor structure, the notional airship also allows for mezzanine decking in order to provide multiple load areas.¹¹⁴ This would allow the carriage of every category of military land vehicle up to main battle-tank size.¹¹⁵ Therefore, the notional airship has a strong aerospace payload capacity.

Precision

Aerospace power can deliver kinetic effects with great accuracy (and minimal collateral damage) due to the inherent qualities provided by surveillance satellites and precision guided munitions. However, precision is also a navigational consideration for Move missions. Indeed, heavy-lift airships are capable of as much navigational precision as other aircraft, as equipment such as global positioning systems and inertial navigation systems are not dependent on platform type. Furthermore, in terms of delivering 90 tonnes of slung cargo to a specific location, the crane-operations-capable notional airship has the precision of a helicopter.¹¹⁶ Therefore, the notional airship is deemed to have strong precision.

Reach

Aerospace vehicles can be projected globally, relatively unimpeded by surface features such as mountain barriers or water expanses. The non-stop, non-refuelled circumnavigation of the world by *Voyager* in December 1986 demonstrated the potential for aircraft reach.¹¹⁷ Indeed, air-vehicle range is limited only by fuel and, for manned vehicles, crew endurance. Air-to-air refuelling and/or the use of “deadhead” crews on board can mitigate these limitations. The notional-airship design provides for extra crew berthing, allowing for flight limited only by fuel. However, no mention of air-to-air refuelling for airships can readily be found in literature at this time, suggesting that this reach extension is not being pursued.

The notional airship’s range of 3225 nautical miles [5972 km] would allow it to fly directly from Halifax, Nova Scotia, to Vancouver, British Columbia, a distance of 2400 nautical miles [4445 km] and from Alert, Nunavut, to Windsor, Ontario, a span of 2450 nautical miles [4537 km]; a superior range capacity. Furthermore, the notional airship’s range just meets the “strategic distance” of 6000 km specified by the WALRUS project.¹¹⁸ Therefore, the notional airship has moderate strategic reach.

Sensitivity to environmental conditions

Aerospace power is sensitive to environmental conditions. For example, bad weather can create difficulties with take-offs and landings, navigation, target acquisition, and weapons delivery. Indeed, most historic airship losses were due to extreme weather such as thunderstorms. Lacking satellite-fed weather predictions and on-board weather avoidance equipment, legacy airships inadvertently flew into storm tracks from which they were too slow to escape.¹¹⁹ In contrast, modern weather forecasting and advanced weather radar systems would allow modern airships to avoid potentially dangerous weather systems.

Even when confronted by winds at departure and/or destination points, the notional airship is less susceptible to strong and/or gusty winds than its predecessors due to its slightly heavier-than-air design combined with its air-cushion landing system.¹²⁰ Furthermore, fly-by-light flight-control systems and pneumatic flight-control actuators provide low susceptibility to lightning strikes and electromagnetic interference.¹²¹

Restricted to operating in the low-level environment, the notional airship may be susceptible to ice accumulations, which increase the aircraft's weight and increase drag. In extreme cases, this can result in an aircraft stalling and crashing. While in-flight anti-icing and de-icing systems such as electric heaters and pneumatic inflating boots may be used, these systems are not yet proven on the notional airship. Furthermore, ground de-icing may be very difficult due to the enormous envelope size. Indeed, the Canadian Forces Aerospace Warfare Centre (CFAWC) Future Air Platform Preliminary Analysis assessed the hybrid airship to be highly vulnerable to weather.¹²² Therefore, pending definitive studies of how snow and ice affect hybrid airships, the notional airship is conservatively estimated to have high sensitivity to environmental conditions. Thus, it is assessed as weak.

Sensitivity to technology

Aerospace power's effectiveness can be significantly affected by relatively small technological innovations. Such advances drive an ongoing requirement for continuous improvement and development of aerospace forces. Indeed, airship history has been highly affected by technological innovations. For example, developments in lifting gases, materials, and internal combustion engines fuelled the development of airships. Furthermore, the slower pace of development relative to airplanes contributed to their decline following the Second World War.

Modern airships attempt to take advantage of technological milestones such as vectored thrust, composite structures, fly-by-light flight-control systems, laminated hull fabrics, turbine propulsion, lifting body-hull designs, and air-cushion landing systems.¹²³ Even so, these airships remain at the prototype stage at best, and their effectiveness can only be determined once a successful production model integrates these technological solutions into legacy airship issues. Indeed, CFAWC analysis concludes that technological risk is moderate for hybrid airships.¹²⁴

Speed

Aerospace power has an inherent characteristic of speed, which provides a rapid response capability that can be projected across a great distance. Furthermore, survivability in a hostile theatre can be increased by using speed to achieve surprise. Compared to airplanes, however, airships have much lower cruising speeds. In addition, airship cruising speeds have not appreciably increased since the 1930s. Higher speeds can be achieved, however, at an unacceptable fuel penalty due to increased power to overcome aerodynamic drag. A 2005 Congressional Budget Office report concluded that achievable speeds for hybrid airships range from 80 to 120 knots [148 to 222 km/h]. The planned cruising speed for the notional airship is 75 knots [138.9 km/h], with a maximum speed of 90 knots [166.6 km/h].¹²⁵

Due to this relatively low cruise speed, the notional airship may be negatively affected by low-level winds. For example, frontal low-level jets in a developing low-pressure system, typically located between 500 and 5000 feet [152.4 and 1524 metres], can produce winds as high as 100 knots [185 km/h].¹²⁶ While this is unusual, airships will, nonetheless, be affected more than airplanes by headwinds and have limited options in seeking more favourable winds at different altitudes. Therefore, the notional airship is considered to have weak speed.

Stealth

Aerospace power can use stealth tactics and/or technology to increase survivability by minimizing the risk of detection. Indeed, due to its structure, the notional airship has an intrinsically lower radar signature than conventional aircraft, resulting in lower risk of radar detection. Furthermore, trials suggest that it would be inaudible at a slant range of 3500 feet [1066.8 metres] and could

use low-visibility or camouflage paint to help blend into the background sky.¹²⁷ Nonetheless, a 600-foot-long [182.8-metre-long] vehicle operating at 9000 feet [2743.2 km] in open sky is not covert.¹²⁸ Therefore, the notional airship is deemed to have a weak stealth capability.

Support dependency

Aerospace power requires high levels of technical and logistical support that must be provided from an operations support base. Indeed, strategic-lift aircraft typically require long runways, large hangars, and extensive movement teams. However, since the notional heavy-lift airships use hover skirts for air-cushioned landings, airfields and associated infrastructure are not required.¹²⁹ Indeed, this design allows for amphibious operations. However, hybrid airships still need a landing/take-off zone with approach and departure paths clear of obstacles such as trees, wires, and other man-made structures. When taking off from the airport of embarkation (APOE) with a full load, up to 8000 feet [2438.4 metres] of runway of open space is required to gain enough speed (and aerodynamic lift) for take-off. This could be a runway or a large drop zone at an army base. Upon arrival in theatre, with most of the fuel burnt, only an estimated 1500 feet [457.2 metres] is required for landing due to the slow approach speeds combined with air-cushion landing system. Once the cargo is unloaded, the airship would be nearly neutral buoyant and would be able to take off almost vertically.¹³⁰ While an aircraft ground-handling team is not required, a cargo-movement team will be required for all cases except for self-loading/unloading cargo such as personnel and their associated land vehicles. Therefore, the notional airship is deemed have strong support dependency characteristics.

Summary

In summary, as shown in Table 2, the notional airship demonstrates a balance of strengths and weaknesses in basic aerospace characteristics. Specifically, the notional airship has strong payload, precision, and support-dependency characteristics. Furthermore, it has moderate elevation, fragility, impermanence, reach, and sensitivity to technology. Finally, it has weak speed, stealth, and sensitivity to environmental conditions. Some of these characteristics are better than other aircraft, some are worse, and some are simply different. The following subsection will examine how these intrinsic aerospace characteristics affect air movement support planning.

Air Power Characteristics	Assessment		
	Strong	Moderate	Weak
Elevation		X	
Fragility		X	
Impermanence		X	
Payload	X		
Precision	X		
Reach		X	
Sensitivity to environmental conditions			X
Sensitivity to technology		X	
Speed			X
Stealth			X
Support dependency	X		

Table 2: Assessment of the notional airship

Joint Movement Support

While the review of the notional airship's aerospace characteristics revealed operational aerospace characteristics suitable for conducting strategic lift, the picture is not complete without considering the logistics aspect of these operations. The joint doctrine manual *Joint Movement Support* provides guidance on this issue. Specifically, a review of the typical generic flow of movements from origin to final destination will provide an appreciation of how airships could expedite this process.

The movement flow of a task force from home to an operational theatre involves planning and execution by several levels of command and normally involves stops at several intermediate locations.¹³¹ The typical movement flow is depicted in Table 3.

Key Location	Routine Use
Home base	Where individual units or components of a task force normally reside and from where movement begins
Staging base	When units are located far from ports of embarkation, staging bases may be required between home base and port of embarkation locations
Assembly base	Where individual units or components of the task force consolidate in order to complete movement within Canada to a mounting base
Mounting base	Where the task force gathers for final preparation prior to loading for strategic transport (in some cases, it may be at the port of embarkation)
Port of embarkation	Where strategic air (airport of embarkation) or sea (seaport of embarkation) transportation begins
Forward staging base	In cases where the ports of disembarkation and embarkation are distant, a forward staging base facilitates refuelling, crew changes, and re-configuration of the task force
Port of disembarkation	Where the strategic transportation requirement for forces is completed, generally a large airport (APOD) or seaport of disembarkation (SPOD)
Marshalling area	Where personnel are reunited with their vehicles and equipment prior to moving forward in-theatre (passengers normally move by strategic air, vehicles and equipment by sea)
Staging area	In cases where it is a considerable distance from the marshalling area to an assembly area, a staging area facilitates vehicle refuelling, minor repairs, food, rest, and consolidation of vehicles/equipment into packets
Assembly area	Where vehicles are refuelled, minor repairs are completed, final briefing and training are completed, vehicles are loaded with combat supplies, and vehicles/equipment are formed into units and directed to their final destination
Final destination	Where a unit or capability is required to be within their intended area of operations

Table 3. Logistics movement flow

The possibility of nine en route stops from home base to final destination seems to contradict the principle of maximum utilization, which emphasizes minimizing turn-around times and avoiding congestion en route.¹³² Indeed, SPODs can easily become choke points, and APODs in land-locked areas of operation can be subject to congestion due to insufficient infrastructure to accommodate large surges in flow.¹³³

With its long reach and low support dependency due to airfield independence and ro-ro capability, the notional airship shows potential to eliminate a number of these intermediate stops, thus improving movement flow. For example, airships could embark personnel and equipment at training areas located at home base, effectively consolidating staging, assembly, mounting bases and ports of embarkation into the same location. Depending on the distance to the area of operations, a staging base may or may not be needed during travel to destination. Further consolidation may be possible, particularly if passengers and vehicles travel together. Indeed, with use of mezzanine decking, personnel could be berthed above the vehicles stored below. If this is the case, the port of disembarkation, forward staging base, assembly and staging areas might also be consolidated. Thus, despite the notional airship's slow relative speed, in certain circumstances it may, nonetheless, be able to deliver troops and their equipment quicker than any other method.¹³⁴

Indeed, the notional airship's potential ability to embark troops and equipment at home base and deliver them directly to an assembly area in theatre promises to maximize the generic movement principle of maximum utilization. Building on this logistics analysis, the following subsection will explore how the notional airship affects specific planning considerations for air movement support.

Movement Support Air

The joint doctrine manual *Movement Support Air* provides CF overall guidance in planning and executing air transport missions.¹³⁵ This document notes that aircraft provide the fastest movement of personnel and cargo, albeit at a high cost. In certain cases, however, there may be no other option. In all cases, though, the advantages and disadvantages of air transport must be considered before it is used. The major planning considerations are: security, speed, load, resources, flexibility, weather, over-flight and diplomatic clearances, joint planning, support requirement, and flight safety.¹³⁶ In order to assess the notional airship's effectiveness as an air transport vehicle, each of these considerations will be examined in turn and operational conclusions drawn.

Security

Transport aircraft are particularly vulnerable to ground-based air defence and air interdiction. Indeed, given the notional airship's weak speed and moderate elevation, it has been assessed as being at high risk of interception.¹³⁷ Despite the notional airship's relatively strong survivability, exposing such a high pay-off target to such threats should be minimized. Therefore, the notional airship should not be operated into high-intensity operations, well-defended areas, or over enemy positions.

Speed

On the other hand, air transport's speed provides an unmatched capability to move cargo quickly over long distances. However, for larger, heavily equipped forces, it may not be the most effective. In fact, CFAWC's analysis concluded that a hybrid airship was too slow for strategic transport.¹³⁸ However, as just explored in the joint doctrine subsection, while the notional airship has a lower relative speed than aircraft, it may be able to deliver cargo direct to destination faster than other means. Thus, in case of complicated conventional movement flow, an airship may be as much as 10 times faster than standard multi-modal means.¹³⁹ Therefore, an accurate time-space appreciation comparing conventional airlift and the notional airship should be conducted for time-critical missions.

Load

Despite the transport aircraft's speed, it has limited cargo capacity in terms of bulk and/or weight. The CFAWC analysis also concluded that hybrid airships were not suitable for strategic lift due to insufficient payload.¹⁴⁰ However, it appears that this conclusion was based on a 50-ton [45.3-tonne] load, which is much less than the notional airship's 200-ton [181.4-tonne] over-size capacity.¹⁴¹ Thus, based on the notional airship specifications, this paper has concluded that the notional airship has an excellent aerospace payload capacity. This discrepancy highlights the challenges of analysing capabilities based on a "paper aircraft"; any conclusions drawn will have to be revisited once a production model hybrid aircraft becomes available. Nonetheless, the notional airship shows potential to be the preferred air platform when tasking missions involving oversize and/or overweight cargo.

Resources

However, air transport can be expensive, particularly when compared to surface-delivery options. Allocating this scarce resource should be made at the highest possible level, and the resulting decisions should be based on operational priorities. Notably, the notional airship promises a unique operational capability due to its unmatched combination of payload, range, and short-field austere capabilities.¹⁴² While a more detailed modal comparison with sealift and conventional airlift will be made in the following section, planners should task the notional airship on missions that best fit its niche capabilities.

Flexibility

Indeed, air transport is flexible and can carry out a wide variety of tasks. In fact, an often-referenced Air Force tenet states: "Flexibility is the key to air power."¹⁴³ With an austere field capability, the notional airship appears to be highly flexible. However, the notional airship's 9000-foot [2743.2-metre] pressure altitude may limit this flexibility. For example, in cases such as mountain flying, visual meteorological conditions may be required in order to navigate over valley floors and passes in order to cross a mountain range. On a cloudy day, the airship may not be able to climb to a safe instrument-flying altitude. In fact, since military flying orders dictate as much as 2000-feet [609.6-metres] clearance above all terrain within 5 miles [8 km] of aircraft track to ensure safety, a CF notional airship may thus be limited when operating in terrain reaching 7000 feet [2133.6 metres] above sea level.¹⁴⁴ Within Canada, this includes large portions of British Columbia, the Yukon, and eastern portions of Nunavut. As a result, this may mean delaying for suitable weather or diverting to alternate routes (if available). In some cases, they may negatively affect mission accomplishment. While the notional airship is highly flexible, planners should consider the notional airship's maximum operating altitude when assigning missions.

Weather

Notwithstanding modern navigation systems and instrument approach aids, weather is still a consideration for air movement. Indeed, operating from austere fields may not be possible in low visibility and/or ceiling conditions. Furthermore, the notional airship's pressure altitude may put it at increased risk to experience weather conditions such as icing conditions. This is particularly true in areas where the surface temperature is near freezing and there is extensive low-level moisture in the air. Such areas include much of Canada's Arctic during periods of the spring and fall, where layer cloud is common.¹⁴⁵ In this type of weather, the most severe icing is generally found in the 0° to -15° C temperature range.¹⁴⁶ With surface temperatures within a few degrees of freezing, this translates to a risk of severe icing in cloud from the surface through to 5000–10,000 feet [1524–3048 metres] above sea level.¹⁴⁷ While the notional airship's pressure altitude of 9000 feet [2743.2 metres] might allow for some manoeuvring space above the most severe icing, this room for altitude change is limited. As when facing mountain barriers, evasion options are limited to delaying for suitable weather or diverting large distances around the weather system.¹⁴⁸

Despite this consideration, a study conducted for the Boeing company concluded that airships could generally operate in northern weather conditions for up to 310 days a year, with January and February being the limiting period.¹⁴⁹ As with some of the other planning considerations, empirical evidence is required before drawing decisive conclusions. At the very least, planners should account for the fact that the notional airship will not always be able to operate on a fixed schedule in the Arctic.

Over-flight and diplomatic clearance

However, there are also planning considerations when operating in higher-density airspace. For example, over-flight and diplomatic clearances are required internationally, even when working with allies. However, due to the notional airship's weak speed and stealth as well as moderate elevation characteristics, non-committed nations may hesitate to grant such clearances. Indeed, the potential for public plausible deniability for the notional airship's passage is much lower than an anonymous jet aircraft flying overhead above 30,000 feet [9144 metres]. As a result, planners must be prepared to adjust routes to accommodate nations who do not want to be seen as facilitating military-related Allied flights over their country.

Joint planning

Furthermore, air transport tasks are assigned at high-level headquarters in conjunction with stakeholder organizations.¹⁵⁰ The airship's unique capacity to deliver large amounts of cargo to austere locations within the operating area may require more tactical-level coordination than has been typical for air transport bound for APODs established at main operating bases. For example, the possible need for customs clearance for international-cargo moves at austere locations may be complicated.¹⁵¹ Should the notional airship be brought into military service, air and joint logistics doctrine and planning procedures would have to be revised in order to appropriately account for a new strategic asset capable of deploying into tactical areas.

Support requirement

In addition, personnel deployed in support of air operations at austere locations may not have access to local rations, quarters, and transport. Provided that the notional airship delivers personnel and cargo such as vehicles that can roll on and roll off to austere locations, the support footprint required is minimal.¹⁵² However, refuelling, de-icing, and/or first-line maintenance for the notional airship and its delivered vehicles may be difficult to complete on-site.¹⁵³ Furthermore, should the notional airship become an organic CF asset, extremely large hangars may be required at home base in order to conduct first- and second-line maintenance out of the elements. Operational research is required before drawing any firm conclusions; however, planners should at least consider that support requirements may be higher than advertised by developers.

Flight safety

Finally, modern aircraft are valuable resources that are not easily replaced. Planning must weigh operational necessity against flight-safety considerations. Given that hybrid airships are an entirely new type of aircraft, it is reasonable to expect a heightened level of risk during the early employment phase. Should the CF procure the notional airship, this risk should be mitigated by incorporating lessons learned from recent fleet acquisitions. Considerations should include, but are not limited to, operational and technical airworthiness, test and evaluation, initial cadre selection as well as standards and training development. Until the notional airship's capabilities and limitations are well understood, planners should be conservative when tasking its missions.

Summary

This air movement doctrinal review has revealed a number of insights on the notional airship's suitability for strategic transport. Specifically, airships are vulnerable to interdiction and should not operate in high-intensity tactical operations, well-defended areas or over enemy positions. While the airship is a relatively slow aircraft, it may nonetheless be able to deliver personnel and equipment quicker than aircraft by expediting the movement flow; a time-space appreciation is recommended to confirm this for time-critical missions. Furthermore, the notional airship has an unparalleled load capacity for aircraft and should be exploited accordingly. However, traditional lift options should not be discounted due to their inherent advantages in certain aspects. Planners should consider the notional airship's operating altitude when tasking missions involving high terrain and/or low-level weather systems en route. Due to this altitude limitation, in conjunction with the notional airship's slow speed and large size, planners will also have to consider that non-committed nations may be reluctant to issue over-flight and diplomatic clearances. Indeed, planners at all levels may have to adjust their templates in order to accommodate the unique capabilities that the notional airship may bring. This is particularly true for operations at austere locations, where support requirement may be reduced in some areas but also could be complicated by the possible need for customs and first-line maintenance facilities. Finally, extensive planning and consideration will be required to safely introduce the notional airship as a new CF operational fleet or leased capability.

Conclusion

This section has explored in depth the notional airship's aerospace characteristics, its impact on the flow of movement, and its influence on air movement support planning. While the notional airship shows strong potential to deliver effective strategic lift, the issue of efficiency has not yet been fully explored. In order to assess the airship's economic feasibility, the following section will conduct a market analysis.

5. Airship feasibility: Market analysis

Strategic lift is a vital capability needed to accomplish Canadian foreign policy and to defend Canada's interests.¹⁵⁴ Traditional methods involve either shipping by sea or air. While the notional hybrid airship may be doctrinally suitable in providing strategic lift, its true capabilities remain unproven. As final development, procurement, and operating costs for the hybrid airship remain speculative, a proven and accurate cost-benefit analysis comparing hybrid airships to sealift and conventional cargo aircraft is not possible at this time. Nonetheless, a comparison of the generic strengths and weaknesses of sealift, conventional airlift, and the notional airship may provide insights into the desirability of pursuing an airship solution for strategic lift. Indeed, the greatest risk to airship development lies not with technical ability, but rather with weak commercial demand.¹⁵⁵ In order to explore this issue, this section will review the advantages and disadvantages of each mode in turn, along with its niche capabilities. In such a manner, the full potential of the notional airship may be revealed.

Sealift

While jet aircraft dominate the global passenger market, sealift is the principal means of over-seas cargo delivery. Indeed, 90 per cent of the world's trade is carried by sea. Furthermore, many of the world's militaries rely on this same network of commercial sealift.¹⁵⁶ The main advantage of sea transport is large carrying capacity and endurance. Consequently, sealift is the most economical over-seas mode of transport for materiel.¹⁵⁷ Furthermore, modern ships with built-in ramps permit a ro-ro

capacity that allows vehicles to be driven on and off the ship. Since this can be accomplished much faster than on other ships, and with less need for port infrastructure, these ships are preferred for vehicle cargo. Also known as large, medium-speed, roll-on/roll-off (LMSR) ships, they are typically 900-feet [274.3-metres] long, have a beam of 100 feet [30.4 metres], a draft of 35 feet [10.6 metres], and cargo capacity of 17,000 to 21,000 tons [15,422 to 19,051 tonnes]. In response to mobility studies after Operation DESERT STORM, the US Navy procured 19 such ships between 1997 and 2003.¹⁵⁸

However, sealift is limited by its slow speed and its vulnerability to interference. The average speed of a cargo ship is 15 to 25 knots [27.7 to 46.3 km/h], which may be reduced in adverse weather or if operating under convoy security. Furthermore, cargo ships are subject to interdiction by enemy submarines and mines.¹⁵⁹ What is more, most sea transport depends on the suitability and availability of port and cargo terminal facilities. Ports must have sufficient depth to accept large container ships, and not all coastal countries have the required major ports.¹⁶⁰ Furthermore, infrastructure such as piers and cranes are required along with movement teams to offload cargo.¹⁶¹ In the case of disaster zones such as the Haiti earthquake in 2010, such facilities may be damaged and/or congested with other ships. For example, the MV *Wloclawek* was unable to secure a berth at Port-au-Prince and was too large to tie up at Léogâne and Jacmel. In lieu, it sailed to Barahonas, Dominican Republic, from where final delivery was completed intra-theatre by air and road.¹⁶² Such intermodal transfers add time and complexity to the movement flow and reduce throughput capacity.

Despite these limitations, sealift delivers the bulk of inter-theatre lift.¹⁶³ Indeed, marine transport is ideally suited for high capacity intercontinental delivery of non-perishable goods.¹⁶⁴ Furthermore, large ro-ro ships currently have a valuable capability to move outsized armoured vehicles and are preferred for deploying high-readiness ground units.¹⁶⁵ These well-established niche capabilities suggest that sealift will remain a desirable option for strategic lift for the foreseeable future.

Conventional airlift

In contrast, it was not until the Second World War that significant military cargoes could be delivered by air.¹⁶⁶ This nascent capability was tested in early 1948, when Stalin ordered a land route blockade of Berlin. This action spurred the Berlin Airlift, the greatest airborne relief operation in history. Indeed, during the 462 days of Allied flying, more than 2 million tonnes of food, clothes, and coal were delivered. This airlift demonstrated the effectiveness of strategic lift and influenced Stalin to end the blockade.¹⁶⁷ During the Cold War, strategic air transport played a more modest role in supporting Allied troops deployed to forward locations against the Soviet threat. With the post-Cold War rise of regional conflicts, however, the need for more timely and flexible air movements became clear.¹⁶⁸

Indeed, the inherent speed and range of transport aircraft allow rapid force deployment over long distances. For example, the CC177 has a speed of 410 knots [759.3 km/h], some 20-times faster than most cargo ships.¹⁶⁹ Furthermore, it has a range of 3200 nautical miles [5926.4 km], which can be extended by air-to-air refuelling and augmented crews.¹⁷⁰ The CC177 can carry forces and equipment over ocean-land boundaries and terrain barriers to inland airports, which may be less congested than typically less numerous seaports.¹⁷¹ Furthermore, for specialized troops and cargo, delivery via airdrop may also be an option.¹⁷² Indeed, the flexibility of air power allows delivery to almost anywhere on the planet.

However, this flexibility is finite, as cargo airplanes depend on airfield infrastructure. For example, the CC150 *Polaris* requires a paved runway with a minimum length of 7000 feet [2133.6 metres]. Furthermore, due to its elevated side cargo door, it requires special handling equipment to load and

off-load cargo.¹⁷³ In contrast, during Op HESTIA relief efforts, the CC177 was able to avoid the congestion at the Port-Au-Prince airport and operate on the more austere dirt strip at Jacmel. However, the CC177 has an extremely limited payload in comparison to sealift. For example, its 75 tonne payload is approximately 1/240th of LMSR ships.¹⁷⁴ This results in a very high lift/cost ratio, approximately \$0.38 per tonne-kilometre. While this compares very favourably with other cargo aircraft, it is very high when compared with sealift.¹⁷⁵ Air transport is also expensive in terms of the number of highly qualified aircrew and technicians needed to operate and maintain complex modern aircraft.

Despite the costs, air transport is favoured for deliveries of time-critical cargo over long distances. When responding to significant incidents, there may simply be no other option. Similarly, despite some of the inherent inefficiencies, airplanes are preferred for passenger transport due to their timeliness.¹⁷⁶ As with sealift, these well-established niche capabilities suggest that conventional airlift will remain a desirable option for strategic lift for the foreseeable future.

Hybrid airship

Given the existing strategic-lift capabilities, is there a legitimate market niche for hybrid airships? Until tested in commercial and/or military applications, any answer must remain speculative. Neither the CF nor any other military currently owns or leases a hybrid airship capable of strategic lift. Nonetheless, CF and US Army interest in this emerging market speaks to its potential.

Airships promise to be much faster and more flexible than sealift and less expensive with more capacity than airplanes. With a cruise speed of 75 knots [138.9 km/h], a range of 3225 nautical miles [5972.7 km], an oversize payload compartment, and amphibious landing system, the notional airship is ideally suited for bulky, non-perishable cargo.¹⁷⁷ No other vehicle is capable of such a feat. One estimate suggests that purchasing a hybrid airship would cost the same as a CC177 but would be three times as productive with one-third to one-half of the operating cost.¹⁷⁸ Furthermore, by placing mezzanine decking with vehicles below and living quarters above, airships could transport personnel with their equipment directly to a runway-independent location in-theatre, avoiding the additional movement step of reuniting personnel with their equipment.¹⁷⁹ Being able to deliver cargo directly to destination avoids the potential congestion that ships and airplanes experience at SPODs and APODs. Furthermore, unlike sealift vessels, the airship is immune to mines, torpedoes, suicide speedboats, and pirate boarding.¹⁸⁰ While an airship is more likely to be hit than an aircraft due to lower operating speeds and altitudes, it is nonetheless more survivable in the event of successful attack. For these many reasons, notional airships offer a number of advantages over conventional strategic lift methods.

However, airships may not be a panacea for the strategic-lift problem. Despite its inherent advantages, the airship has a number of limitations. Airships are much slower than airplanes and much more expensive with less capacity than ships.¹⁸¹ Also, the airship's relatively low operational ceiling affects its ability to cross mountain ranges, fly over adverse weather systems, and avoid visual detection. Similarly, the low cruising speed makes it vulnerable to strong headwinds and rapidly moving weather systems.¹⁸² Finally, since no hybrid airships have been successfully brought to market, the estimated development and operating costs may be higher than expected, negating predicted efficiencies.¹⁸³

Costing estimates for hybrid airships vary, and given the lack of confirmed technical and performance data, there are few such estimates to be found in open literature. For example, in 2005 Prentice et al. estimated a freight rate of \$0.20 per tonne-kilometre for its evolutionary predecessor, the SkyCat 200, and an estimated purchase price of US\$112 million [CAN\$123,502,000] for a

smaller 150-ton [136-tonne] capacity hybrid airship.¹⁸⁴ Similarly, a 2010 Defence Research and Development Canada performance assessment estimated cost of \$0.22 per tonne-kilometre for the SkyCat 200, as compared to \$0.38 for the CC17 and \$0.48 for the Antonov An-124.¹⁸⁵ In contrast, the 2005 Congressional Budget Office study estimated costs for a fleet of 14 to 16 heavy-lift hybrid airships, using 2006 US dollars as a baseline. Specifically, development cost was estimated between \$3.0 and 4.0 billion [CAN\$3.27 and \$4.37 billion], procurement cost between \$4.3 and 4.8 billion [C\$4.7 and 5.24 billion] (approximately \$300 million [CAN\$330 million] each), and a 30-year operational cost between \$3.0 and 3.4 billion [C\$3.27 and 3.71 billion].¹⁸⁶ Such significant estimated development costs, in the face of unconfirmed performance, speak to the challenges that the hybrid airship has faced in securing financing and establishing a commercial presence.

Nonetheless, while precise economic analysis is impossible at this point, the weight of analysis suggests that modern airship technology deserves a second look.¹⁸⁷ Its weaknesses in speed and elevation may be more than compensated for by its oversize cargo capacity and ability to operate at austere fields. In fact, the hybrid airship appears ideally suited for over-size and over-weight air point-to-point delivery to austere destinations. The notional airship thus promises to fill an operational niche that complements, but does not replace, conventional sealift and airlift. While critics may dismiss hybrid airships as fanciful thinking, they may well offer a valuable third mode of strategic lift.

6. Conclusion

This study has demonstrated that modern airships show promise in providing routine, high-volume, heavy-weight strategic lift but also that this capability is not yet viable for the CF, as it remains under development. Still, revolutionary new hybrid designs based on modern technology show potential to deliver new capabilities relevant to the 21st century. Conventional strategic lift delivered by sea and air faces challenges such as growing cargo demand, fuel consumption, and port congestion. Although the idea of an airship solution for strategic lift may seem improbable to some, inventive solutions may be required to address these mounting issues.

As detailed in the *Canada First Defence Strategy*, strategic lift is an essential capability for the CF to meet operational commitments at home and abroad. Indeed, moving personnel and materiel between theatres is essential to projecting and sustaining joint forces. For example, Canada's humanitarian response to the 2010 Haitian earthquake demonstrated the challenges in moving personnel, equipment, and supplies to austere locations with limited infrastructure. Specifically, materiel shipped by sea had to be delivered to a neighbouring country and then delivered by road, while some materiel delivered by commercial air carriers had to be transferred to military aircraft at an intermediate airport. Despite the recent acquisition of the CC177 Globemaster III aircraft and the full-time charter of the MV *Wloclawek*, the *Canadian Forces Strategic Capability Roadmap* identified an insufficient capability for routine, high-volume, heavy-weight strategic lift to and from theatre. As further articulated by CANOSCOM project staff, such a capability should also include an ability to carry a 200- to 500-ton [181.4- to 453.5-tonne] load over long distances, including outsized equipment such as armoured vehicles, and operate in austere and Arctic environments independent of established airfields.

Such capacity and flexibility would be a valuable joint force enhancer in the current security environment. Indeed, the last decade's challenges have included terrorist attacks, ethnic and border conflicts, fragile states, global criminal networks, tensions stemming from globalization, and natural disasters. Negative social and economic trends, natural resource competition, and technological innovations are expected to exacerbate this instability in the coming decades.

Any Arctic airlift operation faces further challenges due to the area's remoteness and extreme climatic conditions such as whiteouts and periods of darkness that can last for months. In particular, flight operations to austere Arctic landing sites (such as tundra, gravel beaches, or sea ice) demand even more weather awareness, crew experience, aircraft performance, and flight-safety considerations. Understandably, such flight operations do not enjoy the predictability or timeliness of routine flights elsewhere in the world.

However, modern hybrid airships show potential to allow the CF to support sustain-heavy operations where normal peacetime commercial forms of sustainment are unavailable or impractical. Unlike legacy rigid and non-rigid airships (such as the *Hindenburg* and Goodyear Blimp, which derive all of their lift from gases such as helium or hydrogen), hybrid airships also gain aerodynamic lift from their airfoil-shaped design. While still limited to a maximum operating altitude, known as pressure height, hybrid airship designs address the ground-handling and buoyancy-compensation issues that challenged their predecessors. Indeed, modern airships are undergoing a renaissance that promises to reinvigorate the industry.

Seemingly forgotten by the general public, airships have flown for more than 150 years and featured in many aviation milestones. For example, DELAG, the world's first passenger airline, safely carried tens of thousands of passengers by Zeppelin over Germany prior to the First World War. In 1917, the German *LZ-59's* 4000-nautical-mile [7412.7-km] return flight from Bulgaria to Tanzania demonstrated an intercontinental range that fixed-wing aircraft would not achieve for another 30 years. In 1919, the British *R-34* made the first return trans-Atlantic crossing. Seven years later, the Italian *Norge* successfully raced against fixed-wing aircraft to be the first to the North Pole. Finally, the *Graf Zeppelin* circumnavigated the world in 1929 with only four fuel stops and went on to carry thousands of passengers to and from Brazil during the 1930s without incident. However, the *Hindenburg's* spectacular crash in 1937 effectively ended the burgeoning airship age, and jet-powered aircraft came to dominate the skies.

Post-Second World War efforts to reinvigorate the airship met with technical and financial failure, hampering investor confidence. However, modern technological advances such as fly-by-light technology, composite materials, vectoring engines, and computer-assisted designs have set the stage for a revival. While a number of companies (such as Advanced Technology Group, Lockheed Martin, and Skyhook International) have attempted to bring the hybrid airship to the market, the British company Hybrid Air Vehicles appears the closest to doing so.

The Hybrid Air Vehicles' heavy-lift model, the *HAV 606*, has an advertised 200-tonne capacity, a range of 3225 nautical miles [5972.7 km], a cruise speed of 75 knots [138.9 km/h], and a pressure altitude of 9000 feet [2743.2 metres]. Furthermore, it promises a hover-skirt landing system for amphibious operations and a large payload module capable of mezzanine decking with ro-ro access for oversize vehicles. Given the success of its prototype, the sale of its long-endurance sister ship to the US Army, and the lack of competitors, the *HAV 606* was deemed to be the best basis for a notional airship to be used for analysis.

Military doctrine provides an authoritative basis for such an analysis and furthermore, serves as a critical sounding board for testing new concepts. With respect to aerospace doctrine, the notional airship displayed a balance of aerospace characteristics. Specifically, the notional airship was assessed as having strength in payload, precision, and support dependency. Furthermore, it showed moderate elevation, fragility, impermanence, reach, and sensitivity to technology. Finally, it was deemed limited by weak speed, stealth, and sensitivity to environmental conditions. Some of these characteristics are

better than conventional aircraft, some worse, others simply different. However, the overall balance of these characteristics suggests that the notional airship is a legitimate aerospace platform that has a number of strong capabilities, albeit with some limitations.

With respect to logistics support doctrine, a review of the typical movement flow of personnel and materiel from home base to final destination revealed as many as nine intermediate stops. In particular, movements to land-locked destinations can suffer from inefficiencies stemming from en route delays due to modal transfer and congestion at ports of disembarkation. With its unique blend of reach, payload, and low support dependency, the notional airship shows potential to improve this flow considerably.

Furthermore, a review of the planning considerations for air movement support revealed a number of insights. The notional airship is vulnerable to interdiction and should operate in benign tactical environments. Despite its slow speed, in certain circumstances the notional airship may be able to deliver personnel and cargo to destination quicker than any other means. It has a large cargo capacity relative to other aircraft, which should be exploited in consideration of traditional means. However, due to the notional airship's relatively low operating altitude, its flexibility is limited, as it may be affected by terrain, low-level weather, and/or over-flight clearance denial. Planners will have to account for its unique capabilities, particularly for missions to international austere destinations where fuelling and customs facilities may be lacking. Finally, ensuring flight safety will be a likely challenge when introducing a completely new type of aircraft to the military operational environment.

Following this doctrinal analysis, the notional airship's commercial merits were compared with conventional sealift and airlift. Undeniably, sealift delivers unparalleled amounts of cargo over much of the world's surface. Furthermore, ro-ro ships provide a critical capability in transporting large and heavy armoured vehicles. Sealift is extremely economical; indeed, it delivers most of the planet's overseas cargo. However, it is limited by slow speed as well as availability and suitability of port and cargo terminal facilities. Nonetheless, marine transport is ideally suited for high-capacity intercontinental delivery of non-perishable goods.

Conventional airlift, on the other hand, offers unmatched speed and ability to fly over natural barriers such as terrain and coastlines. However, payloads are much smaller than sealift and are much more expensive to deliver. Much as sealift depends on ports, airplanes depend on airfields and associated infrastructure. Nonetheless, air transport is ideally suited for time-critical cargo over long distances, such as personnel requiring medical evacuation or critical parts needed for urgent equipment or vehicle repair.

While hybrid airships remain in development, they show potential to deliver a capability that fills a niche between the two. Indeed, airships promise to be much faster and more flexible than sealift and less expensive with more capacity than airplanes. Furthermore, the notional airship's reach, over-size payload compartment, and airfield independence offer a capability that could greatly streamline movement flow from home base to destination. However, the airship is slower than airplanes and more expensive with less capacity than ships. Nonetheless, the hybrid airship appears ideally suited for oversize and overweight air point-to-point delivery to austere destinations. As the hybrid airship's significant development costs and uncertain performance data remain speculative, further research is required when production models become available for operational testing and evaluation.

The CF should, therefore, consider hybrid airships as a potentially viable solution for routine, high-volume, heavy-weight strategic lift to and from theatre. While its development and real-world performance must be monitored, the modern airship promises to fill a viable niche that complements conventional sealift and airlift. With such a balanced strategic lift capacity, the CF would be well positioned to deliver the strategic effects required to fulfill its mandate to the people of Canada.

Abbreviations

°	degree
APOD	airport of disembarkation
APOE	airport of embarkation
ATG	advanced technology group
C	Celsius
CANOSCOM	Canadian Operational Support Command
CF	Canadian Forces
CFAWC	Canadian Forces Aerospace Warfare Centre
<i>CFDS</i>	<i>Canada First Defence Strategy</i>
CFJP	Canadian Forces Joint Publication
CFS	Canadian Forces Station
DELAG	<i>Deutsche Luftschiffahrts-Aktien-Gesellschaft</i>
DND	Department of National Defence
HAV	Hybrid Air Vehicles
JHL	Jess Heavy Lifter
kg	kilogram
km	kilometre
km/h	kilometres per hour
LEMV	Long-Endurance Multi-Intelligence Vehicle
LMSR	large, medium-speed roll-on/roll-off
<i>LZ</i>	<i>Luftschiff</i>
mph	miles per hour
MV	motor vessel
Op	operation
ro-ro	roll-on roll-off
<i>SCR</i>	<i>Strategic Capability Roadmap</i>
SPOD	seaport of disembarkation
US	United States

Notes

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Chapter 4 – A Confluence of Factors: Canadian Forces Retention and the Future Force

Major Mark N. Popov

Abstract

Between 2000 and 2010, the Canadian Forces (CF) faced an attrition crisis that threatened its operational capabilities. Despite a comprehensive, strategic retention plan that reduced critically high attrition, the CF's large, experienced, long-service demographic cohort is approaching retirement, leaving a much smaller mid-service cohort to replace it. The demands of the future security environment, workforce generational changes, the changing Canadian economy, and the necessity for the CF to develop its own leaders from within make retaining a sufficiently large pool of experienced personnel a critical requirement. This paper outlines the CF manning situation; identifies future challenges; compares American, British, Canadian, and Australian retention efforts; identifies internal CF dissatisfiers; and recommends future research and retention activities.

The paper contends that although CF research is comprehensive and well respected, it suffers from knowledge gaps that could be closed by amalgamating scientific research with CF leader assessments to create a full personnel picture. CF pay and benefits are competitive, but a confluence of internal dissatisfiers contributes to personnel attrition, which cannot be resolved by adding pay, benefits, leave, or other motivators; retaining personnel is not an economic function. Mitigating attrition requires some modification of existing policies to reduce dissatisfaction, continued efforts to ensure CF employment is challenging and satisfying, and continued vigilance and effort by CF leaders to demonstrate they and the CF are connected to and appropriately value their personnel. Retention will always be critical to maintaining a healthy force.

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1. Introduction

At the heart of every task completed, every battle won, every mission accomplished, stand our soldiers.¹

The CF takes strategic personnel retention very seriously and has, since 2001, done a great deal to retain its personnel. Retention encompasses all methods undertaken to ensure that suitable personnel remain in CF service; the CF *Military Personnel Retention Strategy (MPRS)* offers a concise, integrated plan to reduce preventable attrition.² While the CF is not currently in a retention crisis, it remains unclear whether CF retention efforts or Canada's economy contributed most strongly to reductions in personnel turnover.³

The current CF personnel situation sees the CF's large, experienced, long-service cohort approaching retirement. Given that the CF must develop its leaders from within, this demographic shift will place the burden of organizational leadership on the smaller mid-service cohort, which will be extremely sensitive to any rise in attrition. The CF's large, short-service cohort, composed primarily of generation Y personnel, expects quick advancement and immediate gratification without long-term commitment. This characteristic will make retaining generation Y personnel and getting them to invest in full careers a future priority.

CF research suffers from gaps that limit its ability to provide strategic leaders with a complete personnel picture. Augmenting current research by including CF leader assessments will balance quantitative scientific deductions with qualitative, experience-based analysis.⁴ Coupling yet-untapped leader knowledge with scientific analysis will build a more complete personnel picture, fine tune research, and tailor the CF *MPRS* to maintain a strong and stable future force.

No one single factor drives CF attrition. Rather, a confluence of numerous small factors acts in concert to dissatisfy CF personnel. Personnel perceive dissatisfiers differently depending on their age and career stage, which necessitates that the CF target retention efforts individually or to small groups rather than to apply them en masse in a "one size fits all" manner. In many cases, the CF does not need to add benefits or pay to combat attrition but rather to reduce dissatisfaction with internal policies, employment quality, or the CF as an organization. Much as a confluence of small factors can drive attrition, a confluence of small changes can combat it.

Retention is an ongoing issue that the CF must continue to institutionalize, research, and address as economic resurgence as well as demographic and defence-priority changes create new retention challenges.⁵

2. Canadian Forces personnel situation 2010

Sailors, soldiers, airmen and airwomen are not human capital, not some faceless mass to be managed as assets, renewable or not, hired, fired and forgotten once they "walk out the gate." Rather, they are the heart and soul of the military mission.⁶

The CF's relatively small number of personnel and large geographic span necessitate that its people move throughout their careers. Movement creates personnel and funding challenges, but personnel mobility and its attendant systemic costs are necessary to maintain a well-trained, experienced military force in a large, sparsely populated and geographically diverse country. The *Canada First Defence Strategy*

articulates the CF's role and mission, and specifies that the CF must conduct six core missions:

1. Conduct daily domestic and continental operations, including in the Arctic and through the North American Aerospace Defence Command;
2. Support a major international event in Canada [e.g., the 2010 Vancouver Olympics];
3. Respond to a major terrorist attack;
4. Support civilian authorities during a crisis in Canada such as a natural disaster;
5. Lead and/or conduct a major international operation for an extended period; and
6. Deploy forces in response to crises elsewhere in the world for shorter periods.⁷

In order to fulfil its domestic commitments, maintain an adequate national footprint, and sustain itself, the CF stations its Regular component throughout Canada.

CF strength and attrition

Despite consistent low-level manning churn, the CF can, on a day-to-day basis, capture an accurate manning snapshot.⁸ The CF's total Regular Force strength is 69,090, and it employs 28,500 civilian public service employees.⁹ Since the Regular Force military personnel number includes those pending release, still undergoing training, or otherwise unavailable for employment, a more realistic figure is that of trained effective strength (TES), which, as of September 2010, stood at 56,700 CF members trained, serving, and effectively employed.¹⁰

Healthy military attrition should be between 6.5 per cent and 10 per cent.¹¹ As illustrated in Figure 1, between 2005 and 2010, CF attrition rose quickly, becoming an area of strategic concern. As a result, the CF increased its recruiting efforts between 2006 and 2008 and implemented the CF *MPRS* in 2009. These efforts increased the size of the force, meeting the Government of Canada's expansion goal of 68,000 Regular Force members.¹² A March 2010 estimate identified CF voluntary attrition at 4.7 per cent, a significant and welcome drop.¹³

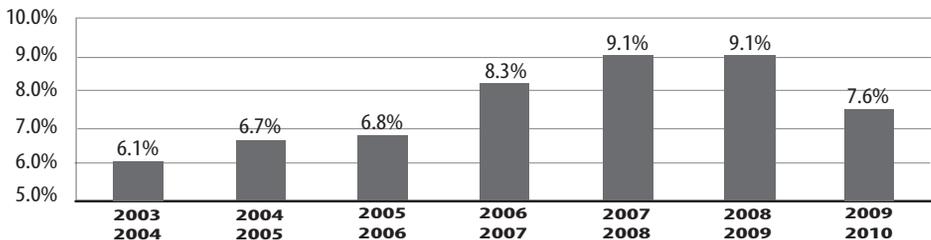


Figure 1. CF Regular Force attrition trends¹⁴

The CF in the world

While its primary responsibility is defending Canada, protecting and supporting Canadians at home, the CF maintains a substantial international presence. The CF's largest, most visible current deployment is its commitment, as part of Canada's whole-of-government approach, to Afghanistan.¹⁵ While Afghanistan dominates current public thinking, the CF also maintains "14 other important missions around the globe"¹⁶ and a presence in collective security bodies such as the North Atlantic Treaty Organization (NATO). Many of these missions are under the aegis of the United Nations (UN), in support of other international bodies such as the African Union, or are short yet large-scale deployments for humanitarian purposes to alleviate the effects of natural disasters. At any given time, the CF has 8,000 personnel preparing for, returning from, or deployed on international operations across the world.

Deployment figures only tell part of international deployments' true personnel costs. Every sailor, soldier, airman, and airwoman deployed must be trained, administered, and otherwise supported, making the true deployment commitment much higher than normally considered. For example, maintaining 2,500 CF personnel in Afghanistan requires a pool of at least 12,500, including those deployed, those preparing to deploy, those just returned, and those supporting the deployment.¹⁷

The CF's most recent humanitarian deployment was 2010's Operation HESTIA, when 2,046 CF personnel deployed on very short notice to Haiti to conduct humanitarian relief efforts in the wake of a devastating earthquake.¹⁸ Domestic operations also incur a personnel cost; Operation PODIUM, supporting Vancouver 2010 Olympic security in conjunction with other Canadian government departments, deployed 4,500 CF personnel.¹⁹ In February 2010, more than 12,000 CF personnel deployed domestically or internationally, serving Canada's interests at home and abroad.²⁰ In light of the Regular Force TES of 56,700, this figure means that more than 21 per cent of the Regular Force was committed to critical operations in 2010.

Canada's Navy conducts long deployments, extended sea service without respite, and extended multinational coalition operations. In 2001–2002, HMCS CHARLOTTETOWN deployed to the Persian Gulf and Arabian Sea as part of Operation APOLLO, Canada's contribution to Operation ENDURING FREEDOM in Afghanistan. During this deployment, it remained at sea on active operations for 74 days straight, a Canadian Navy record, during which sailors and officers were physically and mentally taxed by constant threat and from maintaining watch for 12 hours per day. The 1-in-2 watch system is only meant to be followed for two to three weeks after which it is understood that people begin to seriously tire.²¹

Canadian ships have little spare crew capacity; every sailor has a number of primary and secondary duties to attend to during the course of every deployment. Multitasking, often characterized by multiple, short-notice tasks, which must be completed quickly and accurately, is part and parcel of every sailor's deployed life. Continual deployments, particularly in a Navy that is notably short of personnel, require sailors that have exceptional technical and seamanship skills, understanding families, dedication to the CF as an institution, personal commitment, and endurance.²² Certain naval occupations are prone to "pier hopping" or "pier head jumping" due to the high demand for their critical skill sets.²³ Pier hopping occurs when a sailor returns to home port, then immediately leaves their original ship to join another ship that is leaving for a deployment or training exercise. Army deployments, particularly in today's complex settings, find that: "right down to the lowest levels, soldiers were given tasks that in Canada a sergeant [normally a supervisor with between 6 and 15 years of experience] would be expected to perform."²⁴

It is extremely difficult for soldiers to have privacy, given the demands of long-term communal living during Land operations. These demands are exacerbated by the fact that as deployed personnel they are often under the intense scrutiny of the chain of command. Leaders out of touch with the realities of current operations can focus too intently on enforcing policies suited for peacetime soldiering in Canada but unsuited to the 24-hour nature of operations outside the comforting and safe confines of well-built, secure infrastructure. In larger camps, such as Camp Julien in Kabul between 2003 and 2005, some senior leaders who rarely left camp developed “a garrison mentality that ... crops up all too often ... like a desperate camp follower.”²⁵ This dichotomy, the sharp contrast between operations “outside the wire” and the oasis of North American military “normality” found in large, well-established encampments, adds stress and an element of unreality to the deployed soldier’s life.²⁶

Air Force personnel deploy everywhere supporting Land and maritime operations. Most Canadian warships carry Sea King helicopters, aircrews, and air maintenance personnel, while Canadian Griffon and Chinook helicopters support Land operations in Afghanistan. Air Force crews often deploy on very short notice to support humanitarian operations. For example, air transport crews deployed very quickly to Haiti in January 2010 to deliver much-needed humanitarian aid and to transport thousands of evacuees out of danger.²⁷ Personnel who wear Air Force uniforms but are members of “purple trades”²⁸ common throughout the CF (such as resource management specialists, cooks, supply technicians, and medical personnel) can deploy as members of ships’ companies or Army units anywhere in the world.²⁹ Further, small teams of Air Force logisticians are responsible for such critical functions as ensuring the flow of supplies from Canada (through Canadian Forces Base [CFB] Trenton) to Afghanistan or other deployed operations. Given manning pressures, deployed operations, and limited depth, Air Force support personnel routinely work extended hours to support deployed forces. Since aircraft, particularly Canadian CC177 Globemaster strategic air transports, are capable of deploying quickly to contentious areas, Air Force personnel often deploy on shorter notice, with greater uncertainty, than their Navy or Army counterparts do.

CF personnel strategy

Trained people are most critical to meeting the *Canada First* Defence Strategy’s demands and overcoming the rigours of domestic and overseas operations.³⁰ Maintaining a skilled, well-cared-for force requires significant funding; personnel costs account for more than 50 per cent of Canada’s defence budget.

The CF takes a cradle-to-grave approach in caring for its people and their families. Its approach is unique among Western military forces in that it applies common principles to a unified CF, to include personnel development, generation, and sustainment. CF military personnel management aims to place “the right sailor, soldier, airman and airwoman, having the right qualifications, in the right place at the right time,”³¹ guided by the conceptual model depicted in Figure 2.



Figure 2. *CF military personnel management conceptual model*^{F2}

Each of the model's five strategic pillars is a CF personnel management function, underpinned by doctrine and legislation and synchronized at the top by common tasks and functions undertaken centrally by elements of Military Personnel Command, under the Chief Military Personnel (CMP).³³ While some large-scale strategic functions, such as military personnel production, are centrally managed, individual CF units have the ultimate responsibility for managing their personnel, guided by CF-wide policies, under six overarching principles:

1. **Foresight:** anticipating long-term strategic requirements.
2. **Integration:** integrating demands, objectives, and obligations to support operations and ensuring fair and equitable treatment of CF personnel and their families.
3. **Synchronization:** between all aspects of personnel generation and management to support force development, generation and employment.
4. **Discretion:** maintaining the integrity of information, and balancing individual privacy and respect with operational need to know.
5. **Compassion:** identifying and addressing needs in the most humane, realistic and diligent way possible.
6. **Flexibility:** one size does not fit all; policies must provide sufficient flexibility to allow transparent and fair application.³⁴

CF pay and benefits

CF benefits and personnel programmes are, in many cases, more generous than those found in the civilian world. CF members are entitled to a suite of “flexible compensation and benefits policies and practices that are compassionate and responsive, and that respect the evolving needs of the CF and operations, and of CF personnel and their families.”³⁵ Pay is a critical part of this suite, and Regular Force CF personnel on full-time service are paid well when compared to their civilian counterparts.

Canada’s 2006 census identifies that the average Canadian university graduate holding a bachelor’s degree earns \$52,907 annually, while the average high school graduate earns \$30,116.³⁶ On enrolment in the CF, a basic private earns \$31,956 annually, which rises after one year of service to \$39,072. After four years’ service, barring any misconduct or training deficiency, privates are generally promoted to corporal and earn a basic rate of \$53,712 annually—more than the average Canadian university graduate earns. A corporal with four years’ time in rank earns \$59,076 annually. Most CF non-commissioned officer (NCO) occupations require a high school diploma, while some require only a Grade 10 education. Officer applicants holding a bachelor’s degree or technical certificate enrol under the Direct Entry Officer (DEO) plan, commissioned immediately as second lieutenants (2LTs). DEO 2LTs earn a starting annual wage of \$43,728, which rises to \$70,644 on promotion to captain, normally after three years’ service. A captain with 10 years’ time in rank earns \$93,372. All CF members earn yearly pay incentive increases, while some—technical specialists—search and rescue technicians, flight engineers, and military police (MP) earn specialist pay rates higher than the CF norm for their rank to reflect their specialized skills and training.³⁷ While all CF members serve under unlimited liability, which can place them in harm’s way and does restrict some personal freedoms, CF monetary compensation is, in many cases, better than that found in the civilian workforce.

Remuneration is only part of the overall CF compensation and benefits scheme. The CF offers leave travel benefits, subsidized life insurance, significant benefits for hazardous duty or overseas service, reasonably priced financial planning services, organized sports, recreation clubs, excellent retirement benefits, and relocation benefits.³⁸ All in all, CF pay and benefits are more than competitive with a great many civilian employers.

Leave sustains initiative and enthusiasm and encourages the physical and mental well-being of CF members by providing periodic opportunities for rest and relaxation. All CF members are entitled to at least 20 days’ paid annual leave per year, plus all Canadian statutory holidays. This rises to 25 days of paid leave after five years’ service and 30 days after 28 years. The CF also has provisions for providing compassionate leave, sick leave, and special leave for activities such as education upgrading and community service. Unused annual leave either accumulates for later use, or the CF compensates personnel financially for it.³⁹

Nearly all CFBs have modern fitness facilities staffed with certified trainers that offer more health and fitness programmes “than are made available in the civilian world.”⁴⁰ All CF members use base facilities and staff expertise free of charge, while CF family members pay a nominal fee, substantially lower in cost than casual civilian health-club fees, to use military facilities.

In 2008, five million Canadians lacked a family doctor, while a 2005 survey identified that only 23 per cent of Canadians were able to see a physician within one day of needing one. This performance “is among the worst of any industrialized nation: with just 2.2 physicians per thousand people, [Canada] ranks 24th out of 28 OECD [Organisation for Economic Co-operation and Development] countries ... dead last”⁴¹ among the Group of Eight countries.

CF personnel are all entitled to full health, vision, and dental care, either provided by Canadian Forces Health Services Group personnel or contracted civilian providers. Any Regular Force CF member can obtain medical treatment at any military base in Canada, or by using their CF-provided Blue Cross card at any civilian facility in the event military health-care facilities are unavailable.

The CF offers significant pay, benefits, and conditions of service and is well regarded by the Canadian public.⁴² Very few other employers offer the same unique experience, cradle-to-grave care, benefits, training, and opportunities as the CF.

CF demographics

Much like many Western countries' civilian workforces, the CF has "an unusually large long-service population and an unusually small middle-career population."⁴³ Between 1994 and 2000, the CF downsized aggressively; the two main force-reduction tools were early retirement offers and recruiting reductions.⁴⁴ These practices created a gap in the CF population among those having between 13 and 17 years of service.⁴⁵ When this cohort reaches retirement age and begins to leave the service, the CF will face an experience gap, forcing junior people to advance quickly to fill leadership and key staff billets:

the majority of our experienced ... personnel occupy the band between 16 and 23 years of service. ... Due to the lingering effect of the CF's Force Reduction Program (1995–1996), ... replacement of this population is likely to be achieved only incrementally for the next decade.⁴⁶

In order to stave off the effects of this gap, the CF must retain a large portion of the institutional knowledge and skill that the small Force Reduction Program cohort currently holds. This upcoming challenge is exacerbated by the fact that many in this cohort will reach 20 years of service, a traditional voluntary exit point, within the next 5 years.⁴⁷

CF attrition, domestic economy, and employment trends

It appears the CF's attrition crisis is well and truly over. Current CF attrition is "the lowest it has been in decades,"⁴⁸ and a September 2010 quarterly personnel update, titled "Putting the Brakes on Success," predicted that the current 6.3 per cent attrition rate will "continue falling to less than 6 per cent by 2014/15."⁴⁹

Confidence in the current low attrition rate and the CF's inherent ability to retain its best people may be premature and misplaced. While CF service presents a number of attractive features, the fact remains that it brings its members several dynamics not found in many civilian occupations. It often entails that its members work long hours, make significant personal and family sacrifices, and maintain a "service before self" mentality that may kill or injure them in the line of duty. CF members often have little choice in where or how they are ordered to work, while the exigencies of military service during operations often preclude taking leave until tasks are accomplished. The CF has a well-developed Code of Service Discipline that clearly defines penalties for transgressions and offers little flexibility for personal likes, dislikes, wants, and needs. CF service is a trade-off; on one hand, CF members are well paid and well cared for, while on the other they give up the significant elements of personal choice and freedom and are placed, in many cases, at higher risk than civilian workers. Not all Canadians, even those currently serving in the CF, may find this trade-off beneficial.

Canada's economy, while healthier than several other Western countries', remains in a recovery period, making employment opportunities in the civilian world an uncertain proposition. Canada's January 2011 unemployment rate was 7.8 per cent, a drop of 1.9 per cent from January 2010, indicating a small but steady recovery trend. Alberta and Saskatchewan, Canada's "most employed" provinces, had unemployment rates of 5.9 per cent and 5.4 per cent respectively; Alberta's employment rose by 2.2 per cent from 2010 to 2011, bolstered by continuous worker demand by the oil and manufacturing sectors.⁵⁰ However, the economy remains uncertain for many Canadians, particularly in the Maritimes and in Ontario's manufacturing field. Country-wide unemployment trends likely contribute to CF personnel remaining within the CF's stable employment envelope and "social safety net" rather than striking out on their own to pursue other employment options. While the CF took significant steps to reduce voluntary attrition between 2007 and 2009, the 2008–2009 economic crisis likely played a very significant role. As the Standing Committee on National Defence reports, "the economic downturn may have dissuaded some from leaving the CF,"⁵¹ while United States (US) Army leaders concede that "a cratering economy might be one reason soldiers prefer to stay in uniform."⁵² US military sources report "the weak job market is sending more people toward the uniformed services" in all four US military branches.⁵³

Brookings Institute strategist Michael O'Hanlon notes that although a US-military personnel crisis no longer seems imminent, an improving economy and high casualties in Afghanistan "could return the United States to a situation in which it is difficult to recruit and retain the right people."⁵⁴ Since Canadian employment experienced a similar reduction, a return to 2006–2008's low unemployment levels may once again make civilian employment more attractive to CF personnel. While Afghan casualties are unlikely to be a significant CF retention factor given the CF's upcoming transition from combat to a training mission in Afghanistan, it does stand to reason that CF retention would follow similar patterns when the economy improves. More civilian employment opportunities will likely see CF attrition rise, placing it once more in a precarious personnel situation. A January 2011 Compas Canada poll indicated that 49 per cent of Canadian chief executive officers (CEOs) felt the Canadian economy today was good, 47 per cent felt it was fair, and 39 per cent indicated they felt it would become "somewhat better" within the next six months.⁵⁵ A strong economy puts CF retention efforts in direct competition with the civilian workforce, particularly in the historically strong technology, information, and resources sectors.

O'Hanlon suggests that mandatory military service may be the answer to future personnel generation challenges,⁵⁶ an untenable CF proposition. During both World Wars, conscription raised near-catastrophic national unity challenges. Even though Canada instituted limited conscription to flesh out desperately thin military ranks gutted by years of war against an existential threat, conscription nearly collapsed governments and turned Canadians against each other. National service is not a resolution for any current or future CF manning challenges; a volunteer CF is a part of Canada's national character and, in the absence of a significant shift in Canadian culture, will endure.

The impact of a better future economy will compound current workforce-wide attrition trends:

Employees are more likely to stay with their company during lean times, and so companies have taken them for granted. When the economy strengthens, experience tells us that employees will begin weighing their options and considering other jobs. Since it takes up to 12 months to improve employee engagement, companies need to plan ahead and take the proper steps to ensure their employee retention rates remain high.⁵⁷

Both private- and public-sector employers are concerned about employee retention once the economy improves, particularly employees that are “more productive and top-performing.”⁵⁸ In the first half of 2010, “only 28 per cent of companies were able to hold onto most of their top talent.”⁵⁹ A recent Conference Board survey of 5,000 US households “revealed that 22 per cent of respondents said they didn’t expect to be in their current job in a year,”⁶⁰ while a Right Management survey found that “84 per cent of U.S. employees plan to look for new jobs in 2011—up from 60 per cent a year ago.”⁶¹

Summary

Given the CF’s small “mid-level” cohort, the CF’s pool of future commanders and key senior staff members is much smaller than the CF of the past or the present, so it is “imperative that attrition here be kept as low as possible.”⁶² The CF must retain as many of its best people as possible to ensure proper depth of knowledge and experience to lead the Forces in future. Failure to do this will place younger, less-experienced leaders in positions ahead of their time. For example, Britain’s 19.1 million older, long-service workers will be replaced by only 1.2 million mid-generation workers, meaning “9.7 million [short-service] members ‘will be pushed faster into more high-powered jobs to fill this skills shortage.’”⁶³ Some will rise to the occasion, but many will lack depth and experience, which could have adverse consequences for the Forces as a whole—mistakes made in a military situation by improperly experienced senior leaders can have lethal and potentially disastrous consequences.⁶⁴ While overall retention numbers may look promising, this cohort’s small size means the CF can only sustain limited attrition before losing critical skills and knowledge. While CF service is attractive, it may not remain the most attractive employer of choice for the future, particularly as the economy improves and Canada’s workforce changes. Retention, then, is an issue that CF leaders can ignore only at their peril.

3. The future security environment

*Your military responsibilities will require versatility and adaptability never before required in war or in peace.*⁶⁵

As the only force designed and authorized to defend Canada using a full range of force options, up to and including lethal, high-intensity combat, the CF operates in a threatening and unstable world. This world places significant demands on CF personnel, which makes retaining skilled, experienced, and knowledgeable personnel a key requirement for future success in it. Between 1990 and 2010, there were between 14 and 39 concurrent significant conflicts worldwide, some of which are ongoing at time of writing.⁶⁶ Any of these conflicts could potentially develop into regional conflicts or humanitarian disasters and spur deployments for peace enforcement, stability operations, or high-intensity combat. Further, the world has a significant number of failed and fragile states, which may “serve as safe havens and provide recruits for terrorist and criminal organizations.”⁶⁷

Canada in the future world

In 2006, Prime Minister Harper identified that Canada’s role in the world:

will extend beyond this continent. Our needs for prosperity and security, our values of freedom, democracy, human rights and the rule of law, are, in the view of our government, not only a heritage we share, they are also the common destiny of all humanity. ... We need to work for a more stable and just world.⁶⁸

Canada will continue to participate in world affairs and must be prepared to deploy military forces to maintain Canada’s international credibility, to demonstrate resolve, to take action to protect the helpless, to support UN resolutions, to safeguard international stability, and to mitigate humanitarian disaster. Prime Minister Harper further identifies:

if Canada wants to contribute to global security, we will have to participate in U.N. peace enforcement missions, not just traditional peacekeeping. ... Canada is a reliable and resolute partner in the quest for global security and the fight against terrorism ... The successful pursuit of all of Canada’s interests around the world—trade, investment, diplomatic and humanitarian—ultimately depends on security, on the willingness of some of our fellow citizens to put their own lives on the line. Without security, Canadian companies and consumers can’t take advantage of foreign trade and investment opportunities. Without security, our aid workers can’t provide food, medicine and development assistance. And without security, our diplomats cannot work to share the peace and prosperity we enjoy with less fortunate people in the world—and thereby ensure it for our own future generations.⁶⁹

Future threats

Current theories define potential future wars as “small,” “new,” “fourth generation,” “irregular,”⁷¹ “asymmetric,”⁷² or a series of “interactively complex or ‘wicked’ problems.”⁷³ Recent wars in Chechnya, South Lebanon, Kashmir, Iraq, Georgia, and Afghanistan reflect global urbanization, where combatants seek refuge, camouflage as well as tactical and media advantage by fighting in towns and cities. In the Horn of Africa, Somali pirates sail from the Puntland region in primitive boats, armed with small arms and inhuman viciousness to prey on maritime traffic in the Gulf of Aden and Indian Ocean. In these environments, conventional forces lose much of the stand-off advantage that electronic sensors and precision munitions provide.⁷⁴ Many theorists consider that future threats will be “hybrid,” where an adversary “simultaneously and adaptively employs a fused mix of conventional weapons, irregular tactics, terrorism, and criminal behaviour in the battlespace ... combinations of different modes of warfare.”⁷⁵ Both state-sponsored forces and non-state actors will continue to seek advantage by attacking across the spectrum of conflict, identified in Figure 3.

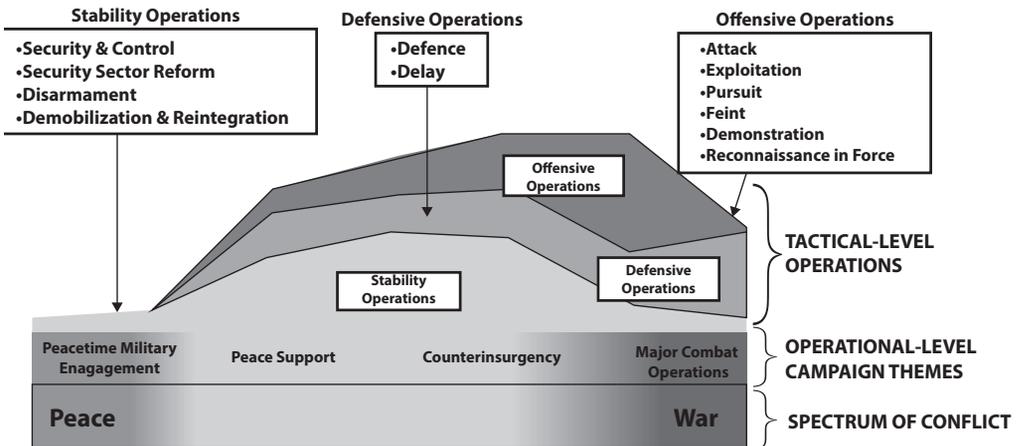


Figure 3. The spectrum of conflict⁷⁶

Hezbollah, the Lebanon-based, Iranian-sponsored Islamic resistance group, epitomizes the modern hybrid threat. It has attacked Israel across the spectrum of conflict since its creation in the 1980s.⁷⁷ During its 2006 war against Israel, it used a variety of methods to kill Israeli Defence Force (IDF) soldiers and Israeli civilians to erode Israeli political will. It held ground from prepared positions using obstacle belts, used antitank missiles at long range,⁷⁸ damaged an Israeli naval vessel with an antiship missile,⁷⁹ and conducted hit-and-run guerrilla attacks using dispersed, lightly equipped gunmen in built-up areas. While fighting IDF elements that had pushed into South Lebanon, it concurrently launched large-scale rocket attacks against northern Israeli towns to oppress and demoralize the civilian population.⁸⁰

The future demands on personnel

Difficulties in operating in areas that are extremely culturally and climatically different from Canada—like Sudan, the Golan Heights, and Afghanistan—are exacerbated by the seemingly erratic nature of violence in these areas of operations. Soldiers, sailors, and air-operations personnel may find themselves switching from a mindset of interaction and cooperation with local residents to high-intensity, sustained combat, in a matter of seconds. Former United States Marine Corps Commandant General Charles C. Krulak coined the term “the Three Block War” to describe the potential for military personnel to concurrently fight, maintain stability, and conduct humanitarian support in a small geographic area.⁸¹ In the future security environment, all three aspects could occur at the same time within a radius of three city blocks.

Military personnel, whether overseas or in Canada, are under scrutiny, sometimes at the international level; even the lowest-level tactical action can have far-reaching effects. “Strategic corporals” (relatively junior, often young and inexperienced military personnel) can potentially have strategic impact. Ubiquitous, networked media presence “will mean that all future conflicts will be acted out before an international audience.”⁸² Both international and domestic operations will be subject to intense scrutiny; United States Coast Guard Admiral Thad Allen, national incident commander of the *Deepwater Horizon* US Gulf Coast oil-spill response, notes “there will never again be a major disaster that won’t involve public participation.”⁸³

Once contentious social media or online news items become “viral” and known throughout the user network, they become a persistent, recurring element whose messages are extremely difficult to counteract. The popular website “YouTube” displays a short video clip of a United States Army tank crew destroying an Iraqi civilian car. The soldiers first shoot the car with pistols, then crush it with an M1 Abrams tank, ostensibly because the car’s occupants were apprehended while looting. During the video, the soldiers make comments such as “that’s what you get when you loot” and “United States Army, tankers Hooah!” and laugh while the tank demolishes the car. The video’s documentary voice-over notes that the car’s owner claimed to be a taxi driver and the US Army had deprived him of his livelihood. In the video, the soldiers appear ill-educated, boorish, violent, and uncontrolled, an army of occupation and oppression vice liberation, who use violence for entertainment. As of February 28, 2011, this video had been viewed 3,385,873 times, while 32,809 viewers made comments, many of them disparaging and uncomplimentary of the US in general and its efforts in Iraq in particular.⁸⁴ Even though the clip is more than five years old, it shows little sign of ever disappearing—many online discussion boards discuss it, and several video-sharing sites contain either it or a link to it.⁸⁵ Every soldier, no matter how junior, constantly represents his or her country under the ever-present, often critical eye of the world of public opinion.

This new, expanded, and chaotic arena—coupled with the increasing cost and technological complexity of military equipment—will tax the skills of and place new demands on every CF

member, not just leaders. CF personnel will have to be warriors, diplomats, technicians, fighters, and teachers; a heavy burden. They will need to embody “adaptability, agility of thought, and timely decision making, all in an ambiguous, complex and lethal environment.”⁸⁶ To meet this challenge, future CF members must be capable, fit, emotionally intelligent, and prescient, exactly the same traits that will continue to be in demand by domestic security entities and business.

As the world becomes increasingly unstable, the future security environment will be more chaotic and dangerous than today’s, characterized by complex, hybrid threats both at home and abroad. Digital media proliferation and communications could potentially make every CF member a strategic influencer, particularly during deployed operations. Enemies will make best use of all available technology, so the CF must be prepared to fight conventional threats and concurrently take a more nuanced approach to winning “wars amongst the people,”⁸⁷ conducting stability operations and acting across the spectrum of conflict, at times concurrently, in a non-contiguous battlespace. In some cases, the battlespace may extend into what are currently perceived as safe zones. For example, on March 2, 2011, a 21-year-old Kosovar Albanian murdered two United States Air Force personnel in Frankfurt, Germany, “as revenge for the American mission in Afghanistan.”⁸⁸

Summary

The future will continue to challenge military personnel to their limits. Manning shortfalls, high deployment tempo, and domestic-operations demands coupled with personnel shortfalls make service today challenging, particularly for CF leaders. Maintaining discipline, morale, and dedication in the future security environment will require strength of mind, initiative, and impeccable character from each and every CF member. As the CF trains its people to higher and higher standards, it increases their attractiveness to outside employers and increases the demands that retaining them will make on CF leaders.

The CF must continue to win the talent-retention war; leadership importance will increase as junior members become more skilled and are placed in positions of greater responsibility. Given that the small cohort of experienced mid-level leaders, many of whom are Afghan-combat or Somali counter-piracy veterans, are approaching critical exit points, the knowledge and skills they hold will grow in importance in the chaotic world of the future.

4. The changing personnel environment

*People resemble their times more than they resemble their parents.*⁸⁹

Given the changing workplace demographic in most Western societies, rapid technological increase, and CF demographics, retaining only mid-career personnel is not the CF’s only and most pressing problem. Leadership, relationships, and the demands of military service are human functions that demand face-to-face contact and close cooperation.

The nature of CF service drives personnel from different generational demographics to work together very closely.⁹⁰ For example, one could find a 22-year-old generation Y platoon commander technically senior to his 46-year-old baby boomer platoon warrant officer but reliant on the warrant officer as his command-team partner and subject matter expert in technical details, low-level tactical activities, readiness, and combat replenishment. While there is a wide gap in experience, both will complete very similar jobs, potentially under fire, and rely closely on each other, in field-training, deployed-operational, or garrison settings. By understanding generational differences, such as those listed in Table 1, one can understand the CF’s future personnel environment:

Generation	Baby Boomer	Generation X	Generation Y
Born	between 1946 and 1964	between 1965 and 1980	between 1981 and 2000
Shaped by	television, the Cold War, student activism, youth culture, FLQ [Front de Libération du Québec] crisis, feminisim, space travel, stay-at-home moms	the energy crisis, technology's first wave, fall of the Berlin Wall, music videos, AIDS [aquired immune deficiency syndrome], working mothers (latchkey kids), rising divorce rates	explosion of technology and media, 9/11, Columbine shootings, multiculturalism, variety of family structures
They value	standing out, recognition	flexibility, honesty, feedback, work-life balance	strong leadership, concern for community, structure, fair play, diversity
On the job they are	a driven, service-oriented team player who doesn't want to be micromanaged. They live to work.	independent, self-reliant, unimpressed by authority and focused on self-development. They work to live.	self-confident, competent, optimistic, outspoken and collaborative
Career motto	education plus hard work equals success	invest in portable career skills	multi-track or die!

Table 1. Serving CF generational characteristics⁹¹

Baby Boomers

The oldest serving CF members are the baby boomers, born between 1946 and 1964, an “outsized, over-entitled, and self-obsessed demographic” that makes up almost a third of Canada’s population.⁹² Often described as the “me generation,” they grew up in relatively stable, nuclear families where “the father worked and the mother stayed at home.”⁹³ They were “the first generation to declare a higher priority for work over personal life”⁹⁴ and in the business world were “the primary force behind workplace practices like participative management, quality circles and teambuilding.”⁹⁵ Baby boomers have enjoyed a lifetime of job stability, economic growth, and prosperity, which virtually guaranteed good prospects to those who worked hard and pursued education. As a result, they are generally in their financial prime and many are financially secure.⁹⁶ By virtue of their cohort’s size, baby boomers have enjoyed a great deal of influence in politics and society, which many will seek to perpetuate, like the “greying Bay Street hotshots ... [who are] quietly pushing to remain at the top of their profit pyramids.”⁹⁷ The CF:

began to see Baby Boomers reach the compulsory retirement age at the beginning of this century, and will continue to see them reach the maximum age for service over the next decade. When junior officers or NCMs [non-commissioned members] complain about ... senior leaders, they are talking about Baby Boomers. After all, the commonplace practice of working “24/7” came from this generation.⁹⁸

Baby boomers make up the CF’s higher leadership echelons; in 2009, the 50th percentile of lieutenant-colonels, colonels and general officers were over 47 years old, as were the 50th percentile of master and chief warrant officers.⁹⁹ A 2000 US Army study found:

Baby Boomer Captains admired and respected their families, but families were usually placed in the background and existed mainly to support the role of the Army officer. Likewise, hobbies and personal time were luxuries not afforded to a Boomer Army officer who devoted every ounce of energy and attention to the job.¹⁰⁰

The CF’s current command and leadership climate, its policies, organizational expectations, and general character are all products of its baby boomer cohort.

Generation X

Generation X makes up the CF’s small “mid-service” cohort. Like the baby boomers, generation X follows the adage “you are what you do.”¹⁰¹ However, many generation X children were “latchkey kids” who grew up in households where both parents worked or were “the product of divorce.”¹⁰² As a result, they learned independence and self-reliance, yet largely due to living through the results of baby boomer work focus, they “are willing to work hard, but they want a life beyond work.”¹⁰³ Downsizing and corporate layoffs make many generation Xers mistrust large institutions and resent the boomers, seeing themselves “snarled in a demographic traffic jam ... stuck behind all those surplus graduates of the past decade.”¹⁰⁴ Generation X prefers “self-formed teams, and tend to display loyalty to these teams rather than to the overarching organization itself.”¹⁰⁵ CF generation Xers have spent their careers in constant flux, various permutations of “transformation,”¹⁰⁶ and doing more with less. A confident generation, labelled at times as arrogant, generation X is easily independent and self-directed; these traits and generation X’s “casual attitude” may be interpreted as disrespect:¹⁰⁷

It’s not that Generation X officers are disrespectful; it is just that they are not impressed by rank or hierarchical position. They have been let down by too many authority figures ranging from their overworked parents to their Commander-in-Chief. As a result, they are extremely sceptical towards authority.¹⁰⁸

Generation X is cynical and pragmatic and has a “survivor mentality”¹⁰⁹ that sees authority as “something to be earned, not declared by position.”¹¹⁰ Many generation X CF personnel have led in complex and dangerous operations. They have commanded platoons and companies during stability operations in Bosnia, served on ships conducting counter-piracy operations in the Indian Ocean and interdiction operations in the Middle East and South West Asia. They have filled various roles during domestic operations and disaster assistance to Turkey, Honduras, Pakistan, and Haiti. Since 2001, many have led from the front in ground combat in Afghanistan. Many baby boomer CF leaders were unit, task force, or higher-level commanders or members of senior planning and operations staffs, earning campaign stars and meritorious service decorations for important service in various theatres.

However, many more generation X personnel have been actually doing the jobs they trained to do as tactical leaders in complex, lethal, and arduous settings.

Despite its cynicism and overly practical nature, the CF's generation X has been tried, tested, and found exceptional in the crucible of combat, particularly in complex leadership roles. That it has experienced a series of military and leadership challenges not shared with baby boomers and very few generation Y personnel will further make this generation unique. It will likely become even more cynical and pragmatic, particularly when dealing with those who have not done what they themselves have done; "someone has to puncture irrational exuberance and Xers are ideal for the job."¹¹¹

Generation Y

Generation Y is the CF's youngest group and forms most of its short-service cohort; the CF's most attractive recruiting demographic is made up of Canadians between 17 and 34 years old.¹¹² Many of this group's more than 7 million members (more than 20 per cent of Canada's population)¹¹³ are members of generation Y. A well-educated generation, nicknamed "Generation Why" because of its inherent thirst for knowledge and tendency—driven by attentive, indulgent parents—to require explanations and nearly constant personal attention.¹¹⁴ "When Gen[eration] Y ask why, it is not a brazen challenge of authority, unless we choose to make it so."¹¹⁵ This thirst for knowledge, ability to connect and find answers through many channels, coupled with globalization, equity, and migration trends have made generation Y "global in their thinking. They are color-blind, they are gender-blind, they really don't have the biases"¹¹⁶ found in older generations. Generation Y workers are unlikely to commit to long-term careers, preferring a breadth of experience:

the world is full of too many choices "If you make a bad decision and enter a new career that doesn't align with your strengths, wants or desires, then you can simply pick up and make another career change with very little consequence,"

They enter the workforce thinking they should be showered with things that they want

They're "free agents," and... there's no such thing as job security in an uncertain economy.¹¹⁷

Web-adept, generation Y expects information and attention to be tailored to individual needs and has multitasking as "part of its DNA."¹¹⁸ Generation Y places more importance on speed and efficiency rather than social niceties or roles within an organization,¹¹⁹ making large, bureaucratic, hierarchical organizations, where development and innovation happen glacially, inherently unattractive to it. Concurrently, generation Y personnel require near constant feedback, coaching, and mentoring to stay engaged and perform effectively, making managing them an often time-consuming proposition.¹²⁰

Without regular supervisor attention, generation Y workers can become resentful or "feel lost,"¹²¹ but they are willing to work hard, as long as they have the support they perceive they need.¹²² However, generation Y's concept of work versus reward and the necessity to earn positions of prominence is skewed from that of previous generations. Generation Y personnel seek instant gratification and are often impatient, reluctant to earn their way to positions of importance. Generation Y personnel are "accustomed to the nice stuff that their parents' hard work provides but reject the process that it took to get it."¹²³ Generation Y views remuneration differently than other generations and expects work to be interesting, exciting, meaningful, and personally fulfilling,¹²⁴ not that "pays

well but is boring or annoying.”¹²⁵ While generation Y can be reward focused, its members are also “hardworking, entrepreneurial, startlingly authentic, refreshingly candid and wonderfully upbeat.”¹²⁶ Generation Y is extremely community minded:

[Generation Y students] firmly believed that members of their generation held strong civic commitments. Mary Ann, a suburban high school senior, offered this opinion: “I think it is big and not just because it is required here. I do a lot of extra stuff just because I enjoy doing it. I see my friends in public schools doing it when they don’t have to. We want to use what we know and have to help others.”... Regardless of whether their generation was volunteering for personal gain, personal fulfillment, or to fulfill a requirement, most students believed that such acts would ultimately improve their communities and the broader society.¹²⁷

Government initiatives bolster and inculcate the bent towards public service and volunteerism; Ontario mandates that students perform a “minimum of 40 hours of community involvement activities”¹²⁸ in order to earn a secondary-school diploma. This characteristic makes generation Y personnel more eager to support humanitarian, peacekeeping, and stability operations than their baby boomer and generation X predecessors, who tend to view them as detracting from the core military functions of fighting and winning wars. Despite critics dismissing generation Y as “couch potatoes and computer geeks hooked on Internet video games,” modern military service, including combat, has found generation Y “as courageous and dedicated in combat as any generation.”¹²⁹

CF generations and technology

Canada is the world’s leader in time spent online, and each Canadian spends, on average, 43.5 hours on the World Wide Web monthly.¹³⁰ While most CF equipment is technologically advanced and all CF generations use digital technology, identifying technological differences between generations provides better understanding of differences between serving generations’ approaches and attitudes. Generational approaches to technology differ. Technological competence will grow in importance in “the age of technical confluence, in which advances in each field of human knowledge speed advances in all the others.”¹³¹

Generation Y, the first “digital native” generation, grew up “surrounded by digital media”¹³² and is extremely adept at finding technological solutions to challenges. When learning new systems, they can “intuitively navigate through new menus and interfaces, master new control sequences and process images faster than they can process words.”¹³³ As generation Y is comfortable networking and communicating through many means, asynchronously and concurrently, managing it “is an impossible task, at least if you define ‘manage’ as controlling their channels of communication.”¹³⁴

Generation X grew up seeing technologies emerge and move from science fiction to commoditized consumer goods and, thus, is more comfortable than the baby boomers in using technology to innovate and create. However, lacking generation Y’s seamless integration of technology and life, generation X uses technology as a tool only:

Gen Y ... are the true online natives and have integrated technology into their everyday lives. They spend more time online than Gen X, watch more online video and text message more often. Technology forms a major part of their entertainment and socializing. ...

Gen X, on the other hand, tends to use technologies that support their lifestyle needs such as online banking and online shopping. They have hectic lives, with careers and families, and embrace the convenience of digital. While the number of Gen X's reading blogs and using social media is rising, they still fall behind those younger than them.¹³⁵

While the boomers have adopted technology and are the fastest-growing Canadian Internet-use segment,¹³⁶ and generation X grew up using automated teller machines and electronic devices, generation Y “has always considered ‘google’ a verb.”¹³⁷ It is the most prolific generator and user of online content and social media; 82 per cent of generation Y adults generate and contribute online content.¹³⁸ Whether civilian or soldier, Facebook, YouTube, Google, and MySpace are not tools to generation Y, they are inextricably linked to its life.¹³⁹

Trooper Marc Diab, a 22-year-old soldier from the Royal Canadian Dragoons killed in action in Afghanistan on March 8, 2009,¹⁴⁰ is an example of the generation Y soldier. He documented pre-deployment training and deployment on video, which he shared with family and friends. He routinely used personal leave and free time to support a church youth group, which revered him, in his home town of Mississauga, Ontario. While older soldiers typically write sealed letters to loved ones, to be opened only in the event they are killed, Diab “created a [video] montage called See You Tomorrow for his loved ones in case he didn't come home alive... his reflection of life beyond death.”¹⁴¹ After his death, two generation Y filmmakers used videos Diab created as the inspiration and basis for a documentary about Diab's life and soldier sacrifice in Afghanistan called *If I Should Fall*.¹⁴² Generation Y, whether in uniform or not, masters technology, has incredible initiative, expects to be networked, and truly does believe that the world is indeed a stage where information, images, and opinions flow freely.

Generational conflicts and challenges

The brewing generational conflict between generation X leaders and their “little velociraptor ... ferociously ambitious” generation Y subordinates will be a future challenge.¹⁴³ Generation X, forced to earn its way into a workforce dominated by a larger, older, self-interested baby boomer cohort, sees generation Y's attention demands as unwarranted, an attitude much like “a middle child.”¹⁴⁴ In addition to dealing with a cohort of “potentially the most annoying employees and coworkers you've ever met,”¹⁴⁵ generation X bears the burden of working within a system designed by and for the baby boomers, but with shifting rules:

Where the Boomers were indulged, the Xers were overlooked; the Boomers had time to “hang out,” the Xers have always been pressed for time; the Boomers saw [and seized] a world of opportunity, the Xers felt forced to adopt a survivor mentality [which was aggravated by the North American financial crisis].¹⁴⁶

[Generation X's burdens will be further exacerbated by the looming pension crisis as the Boomers, en masse, age, retire and demand high standards of living and service]. By 2031, about 25% of Canadians will be aged 65 or older, up from 13% [in 2006]. Per capita spending on healthcare for those aged 65 and older is estimated to be almost five times greater than spending on the rest of the population... By 2030, it is predicted that there will be 40 retirees for every 100 working-age persons, up from 21 for every 100 in 2003.¹⁴⁷

In the CF, generation X sergeants (Sgts), majors (Majs) and lieutenant-colonels (LCol) expect generation Y corporals (Cpls), lieutenants (Lts) and captains (Capts) to “do their time” to earn recognition, attention, and eventual promotion, much as they, the generation X personnel, had to. The military system’s inherent deference to and respect for experience as well as the necessity to achieve certain career milestones and demonstrate long-service institutional commitment both contribute to generational friction. While not an insurmountable obstacle, generation X leaders must be aware of and attuned to attitude differences and ensure that they do not let their subordinates feel that they have been “abandoned” or “assessed” rather than being mentored.¹⁴⁸ Business literature identifies that baby boomers have more affinity for and better relations with generation Y than X, exacerbating resentment and poor relations.¹⁴⁹ While unlikely to have widespread CF effect due to military hierarchy, generational favouritism could add to future leader challenges and burdens.

Maintaining mission focus and building cohesion during operations, given generation Y’s short attention span and low-cost, readily available global communications,¹⁵⁰ could pose other challenges. A US Army study of soldiers deployed to Iraq notes “unit cohesion may suffer as soldiers devote time and energy into maintaining the emotional bonds with their families rather than their comrades.”¹⁵¹ Today’s generation Y soldiers already demonstrate this characteristic. Even in home garrison life, the soldier “has his own bathroom, kitchenette and fully wired entertainment hub, . . . he withdraws to his virtual life.”¹⁵² During deployed operations, rather than interacting with their comrades during relaxed time or taking part in collective activities such as sports, many retreat into video gaming, watching movies on portable terminals, or connecting with distant friends and family via Internet connections, which they see as a necessity, not a luxury, even in isolated forward positions.¹⁵³ Given that generation Y personnel were “weaned on the frenetic pace of Sesame Street and MTV,” they may be able to successfully multitask and compartmentalize the demands on attention that a wired world brings.¹⁵⁴ However:

Soldiers may develop unhealthy battle rhythms of putting in their time during their shift and then retreating for the rest of the day and night to their virtual friends and families. Units with missions off the FOB [forward operating base] have the advantage of more interaction between soldiers, but even in these units, it is not unusual for soldiers to cloister themselves back on the FOB with their own music, videos, and Internet connection to home.¹⁵⁵

Even though individual soldiers may be able to balance the personal demands of the wired world, their commanders face the unenviable challenge of maintaining unit cohesion in a force where its members have been raised with the view that collective cohesion and sacrifice may be subordinate to individual connectivity and personal balance.

A hierarchical, bureaucratic entity like the CF, which is often slow to adopt new technology and procedures, is at odds with generation Y personnel’s attitudes. This challenge will be exacerbated by frictions between generation X’s cynicism, gloomy outlook, and mistrust of authority and generation Y’s boundless optimism and desire for instant reward and responsibility without “doing its time.” While baby boomers and generation Y have relatively good working relationships, the same cannot always be said for generations X and Y, despite the characteristics they share. Further, generation X’s leadership challenges have only just begun:

Generation Xers will step into leadership positions and face the challenge of managing significant generational differences, which will require the best attributes of transformational leadership style. The next decade in the workplace promises to provide some interesting generational dynamics.¹⁵⁶

Generation Y's proclivity to seek a series of jobs vice committing to long-term careers will create challenges in building human capital, which can only be resolved by flexible and creative retention efforts. While "job hopping" is most closely associated with generation Y, some studies find that generation X also views multiple career paths as "preferential to the 'job-for-life' mentality of past generations."¹⁵⁷ Retaining both generation X and Y personnel will require creative and different approaches, but it is critical to perpetuating CF collective knowledge and skill. Culturally, the CF should abandon the attitude, endemic to nearly all military forces, that each successive "new generation" is less capable than that which preceded it. Living in the past will create a force that is stultified vice creative, defensive in the face of innovation, and completely unsuited to upcoming CF generation Y personnel.

Summary

To capture the collective benefit of the CF's recent successes in complex operations in order to ensure that its senior leaders have sufficient skills and experience, retaining the small generation X cohort is critical. To sustain the future force in an increasingly uncertain world, given the lack of lateral entry in military forces, retaining generation Y personnel for career-length commitments rather than short-term jobs is also critical. Inherent generational differences, the changing personnel environment, and potential generation X/Y conflicts will make motivating, retaining, and leading the future force a challenge that future leaders must successfully overcome.

5. Retaining good people: Attrition's costs

*There is a body of essential knowledge and expertise relating to the deployment of violence which is unique to the profession of arms ...*¹⁵⁸

Military attrition carries costs more acute than attrition in the civilian world. While some costs are financial, others are intangible, related to the constraints of military service. The demands of military service, its members' unlimited liability, and the necessity to succeed in vital missions demand a numerically healthy force and the maintenance of corporate knowledge that can only be learned and institutionalized through experience. Unlike business, the service industries, manufacturing, agriculture, and other employment sectors, military skills cannot, for the most part, be learned anywhere outside a military context. Military forces have "no lateral entry, the most able people must be identified, retained, and promoted from within the organization."¹⁵⁹ The military profession "does not bring in senior leaders laterally from outside of the organization; they must be developed from its own junior leaders ... in no other field are the professionals expected to willingly lay down their lives if necessary."¹⁶⁰

Military naval service demands that leaders put sailors and ships in harm's way to accomplish missions, regardless of sea state, weather, or threat. While all service at sea demands that all professional mariners have a high degree of discipline, technical skills, seamanship, and leadership, the demands of naval service in armed vessels add an additional dimension.¹⁶¹ There is no civilian maritime experiential equivalent to that of serving in armed naval vessels; civilian sailors do not face the same tactical and intellectual demands that using, or potentially being targeted by, long-range, lethal weapons brings. All military professions require the same rigour, have the same high consequences of error, and require skills that only the shared experience and pooled knowledge that military service brings can replicate. The only organizations that can effectively train military personnel are military forces. Military skills are in demand by business and industry—"former officers make up just 3% of the U.S. adult male population but about three times that of the CEOs of S&P [Standard & Poor's] 500 firms."¹⁶²

“The most priceless thing to come from combat in Afghanistan is the Warrior Spirit, not just in the Army, but across the CF.”¹⁶³ Unfortunately, Warrior Spirit can develop only in the company of warriors. It develops through training, experience, and membership in an organization, fostered by leaders who have practical experience and the credibility to inspire their people to excel in demanding military environments. Maintaining this spirit relies on the force having a critical mass of experienced, credible leaders; without them, the character of the force is diffused and the force loses the very cohesion and will that is the cornerstone of its capability. Further, when mid-level personnel leave, the pool of those that are institutionally experienced and skilled enough to be the next generation of leaders shrinks.

Financial costs—early attrition

While mid-level leader attrition incurs intangible organizational costs, early trained personnel attrition poses less of an organizational cost but significant measurable financial costs.¹⁶⁴ While all training incurs costs and some attrition is always necessary, large-scale early attrition turns training costs from investments in capability to unrecoverable sunk costs. Army combat engineers, electrical mechanical engineering (EME) officers, nurses and medical officers (MOs) are prone to high early-career attrition.

Combat engineers, whose primary role is to enable friendly forces to live, move, and fight on the battlefield, while denying the same to the enemy,¹⁶⁵ had an overall 2006 attrition rate of 6 per cent.¹⁶⁶ However, early career engineer attrition was significantly higher: after four years of service, only 65 per cent of trained combat engineer soldiers in any given cohort remained in service. It cost approximately \$220,000 in 2006 dollars to train a combat engineer up to their fourth year of service. This early attrition incurred a sunk cost, which offered very little return on investment, of 35 per cent of total training cost, or \$77,000 per soldier per cohort. Since engineers’ unique skill sets are necessary to support every type of CF operation, both in Canada or overseas, this cost is one the CF cannot afford to pay.

EME officers are a relatively small military occupation. Technical experts, EME officers are part of the CF’s combat service support capability, overseeing Army, Navy, and Air Force land-based equipment maintenance and other service support activities.¹⁶⁷ EME officers must hold a bachelor’s degree in science or engineering unless they have sufficient technical experience, so most EME officers either graduate from a CF-subsidized university programme or enrol after earning a degree. In 2006, it cost approximately \$200,000 to train an EME officer, not including subsidized university costs. While EME officers also had a 6 per cent attrition rate in 2006, this rate, as in the case of the combat engineers described above, was also skewed towards early attrition. In 2006, an average of 35 per cent of any given EME officer cohort will have left the Forces within three years of completing training, leaving behind only 22 of the average of 35 EME officers recruited yearly.¹⁶⁸ Monetarily, this translates to a sunk cost of \$2,600,000.00 or \$70,000 per officer trained. According to the CF’s *2008–09 Report on Regular Force Personnel*, EME officers were 16.3 per cent undermanned, with only 344 of the preferred manning level’s 411 positions filled; as of January 1, 2011, the CF contained only 346 trained EME officers.¹⁶⁹ In the case of EME officers, attrition has had not only a financial but also a capability cost in light of the highly technical nature of most military equipment.

CF medical specialists are another group sensitive to attrition. A 2006 Auditor General’s report found that 71 per cent of military physicians leave within 10 years of joining the CF, while two in five military nurses leave by the time they complete seven years’ service.¹⁷⁰ Although civilian facilities provide their medical skills, medical professionals require the same seasoning, experience, and

training as the rest of the CF. To be most effective, they must also have a body of military knowledge and skill that is only acquired through CF experience. For example, task force surgeons in Afghanistan, normally lieutenant-colonel MOs, must provide operational-level advice to task force commanders on a host of subjects with regard to the task force's health, personal readiness, and medical fitness. They must know and intimately understand the conditions of service found wherever CF members serve; to do this, they often travel "outside the wire" to remote forward locations to gauge the state of medical care and soldier morale in forward locations. They can only complete these responsibilities effectively if they have both in-depth medical and CF leadership knowledge, gained only through experience.

High turnover will create a knowledge gap between the medical world and the rest of the CF. While medical technicians, nurses, and MOs currently enjoy immense credibility with the CF's sailors, soldiers, and Air Force personnel, those without "front-line" service in ships, Army field units, and Air Force units lack a certain experiential element that only service with a line unit can bring. The gap is not impossible, but without a body of medical/military knowledge and experience, the CF medical profession's capability and credibility will suffer.

Recruiting versus retention

While it may be an attractive proposition to focus on recruiting new people rather than retaining existing ones, this thinking carries a host of long-term challenges and hidden costs. A 2007 Australian study found that

assuming a force of 51,000, a one percent improvement in recruitment will realise some 500 enlistees. Conversely, a one percent increase in the effectiveness of retention results in two outcomes: first, it keeps 500 trained personnel within the organisation and second, it means 500 less people need to be recruited to maintain current levels of organisational capability. Thus, a one percent increase in the effectiveness of retention translates to a net benefit of 1000 people, over and above other organisational benefits such as training cost savings and the retention of valuable organisational memory, skills and experience.¹⁷¹

Canadian figures reflect a similar trend. In the CF, combating a 1 per cent rise in attrition requires 1,150 candidates recruited and trained. In order to attract and recruit these 1,150 suitable candidates, recruiting centres must process approximately 3,300 additional applicants.¹⁷² In addition to burdening recruiting centres, additional basic training pressures will further stress an already stretched system, causing both organizational costs in terms of skills required to train personnel, and real, measurable, unrecoverable financial costs. Business research finds "the costs associated with recruiting, selecting, and training new employees often exceed 100% of the annual salary for the position being filled"¹⁷³ and assesses "the cost of hiring and training an hourly worker at 300 to 700 times the worker's hourly wage."¹⁷⁴ The US military spends approximately "\$9,000 or \$10,000 (US) per recruit."¹⁷⁵ Recruiting new people vice retaining existing ones is costly.

Recruiting new personnel rather than retaining existing personnel creates long-term expense and systemic challenges over and above the initial financial outlays noted above. The CF lacks the capacity to train large numbers of new recruits, particularly in technical occupations requiring a high degree of skill. In 2009–2010, the CF attracted and enrolled personnel beyond its expectations, creating a gap between TES and preferred manning levels due to the nearly 12,000 CF personnel in training after enrolment.¹⁷⁶ However, it lacks the capacity to train all its support and technical personnel to

put them into service in a timely fashion. Technical training courses are often long and are equipment and instructor intensive, so each course has limited student capacity. As a result, there is a backlog of untrained personnel awaiting training (PAT). Due to the sequential nature of CF training, PATs offer little benefit; they cannot be deployed overseas or within Canada to complete other duties while they wait, they cannot be employed without supervision, nor can they be employed doing tasks they have not yet been trained to do. CF operations have a voracious appetite for skilled technicians and supervisors; although CF technical schools lack instructor depth, pulling instructors from line units to increase school staffing is not feasible. Further, long waiting times for courses create management challenges for career managers and the CF units waiting for new technicians to arrive.

Large PAT populations challenge leadership and management and drain existing resources. In September 2010, the CF had 1,152 personnel who had been PAT for more than 90 days.¹⁷⁷ A new CF private earns \$2,663 monthly, so 1,152 PATs cost the CF \$3,067,776 in wages every month. Supervising and administering more than 1,100 untrained personnel will require at least 60 full-time staff, based on a ratio of one supervisor per 20 subordinates.¹⁷⁸ Given a Sgt's monthly wage of \$5,142 as an average, it costs the CF a further \$308,520 monthly in personnel wage costs, just to supervise its untrained personnel.¹⁷⁹ Therefore, 1,152 PATs can cost the CF approximately \$3,376,296 monthly, or \$40,515,452 per year in pay costs alone! The CF must feed and house PATs until they complete their training, two further expenses that create an additional financial drain on scarce resources.

The CF's PAT situation causes an ongoing and significant financial cost, demonstrates institutional shortcomings, and drains much-needed leadership capacity from the greater CF. New recruits, having completed their basic training, eager to train and serve, are easily disillusioned by an extended wait time. This frustration can cause PAT cohort attrition. Any PAT personnel that lose motivation and release while awaiting training prior to serving even one day in an operational role deliver no return on CF investment—a completely sunk cost which offers the CF no value.

Summary

While healthy attrition of approximately 6 per cent is necessary for the force's health and development, unhealthy, high voluntary attrition is a losing proposition. PAT attrition drains CF financial and leadership resources for no return on investment, while early career attrition provides some return on investment but is rarely commensurate with the initial costs incurred to train personnel. Mid-career attrition—particularly from the small, stressed “middle cohort”—is most damaging. The knowledge and skills inherent in this cohort's personnel cannot be easily replicated by any method other than time and experience. Recruiting new personnel to replace those who leave is financially expensive, both in initial outlay and, in the case of technical specialists, during the period between their enrolment and completion of training. In every sense, retaining the existing workforce is more cost-effective than recruiting new personnel.

6. Assessing the challenge: Retention, research, and recent trends

*If soldiers are happy doing their job, they're going to stay in While money talks, soldiers stay if they believe their command cares about them and their families.*¹⁸⁰

Both the civilian and military worlds have researched attrition and retention in some depth. Among Canada and its closest military allies, while there are small variances from country to country, the ABCA countries (America, Britain, Canada, and Australia) have endured similar

attrition patterns and made concerted retention efforts.¹⁸¹ This section of the paper will examine a cross-section of ABCA attrition patterns and trends but will not definitively explain the myriad details of each and every force’s attrition challenges and retention schemes.

Australian Defence Force

Of its ABCA allies, the Australian Defence Force (ADF) is most similar to the CF.¹⁸² Slightly smaller than the CF, the ADF has 57,799 permanent military (regular force) personnel and 15,691 Australian public servants.¹⁸³ From 2001 to 2010, ADF separation rates fell from a high of 14 per cent in 2001, to a plateau between 10 and 11 per cent from 2004 to 2007 and sat at a 12 month rolling separation rate of 7.1 per cent at the end of 2010.¹⁸⁴ Between 2005 and 2010, the ADF supported no fewer than 18 concurrent international deployments; at time of writing, it was involved in 20.¹⁸⁵ ADF personnel are remunerated similarly to their Canadian counterparts, yet have a greater variance in wages at each rank level. For example, while a CF corporal’s pay range runs from \$53,712 to \$59,076 annually depending on years in rank, their Australian counterpart’s salary ranges from 45,403 Australian dollars [Canadian (Can)\$46,085] to \$79,425 [Can\$80,626].¹⁸⁶ Australian personnel receive a range of specialist skills and allowances, much as their Canadian counterparts do, for occupations such as paratroopers, clearance divers, special operators, submarine crew members, flying, sea time, and field conditions. ADF personnel also receive a host of non-salary benefits, which include, among others, housing and accommodation, defence-supported child care, dependant-care costs, transition management services as well as learning and development benefits.¹⁸⁷

Australia conducts a series of annual Defence Attitude Surveys (DAS). The 2004 exit survey identified the ADF attrition reasons, as illustrated in Table 2. Findings from DAS 2008 indicate dissatisfaction with work/life balance and postings’ impact on spousal employment and children’s education. About half of personnel surveyed believed “civilian employment was more financially attractive than Service employment.”¹⁸⁸ Chronic reasons for ADF departures include: to make a career change while still young enough, ... desire to stay in one place ... including a transition towards [longer-service personnel] settling down [as their time in service increased].¹⁸⁹

Rating	Less than 5 years	5–10 years	10–15 years	Greater than 15 years
1	Better career prospects in civilian life	Desire for less separation from family	Desire for less separation from family	Desire to stay in one place
2	Lack of job satisfaction	To make a career change while still young enough	To make a career change while still young enough	Desire for less separation from family
3	Desire for less separation from family	Better career prospects in civilian life	Desire to stay in one place	Desire to live in own home
4	Low morale in my work environment	Desire to stay in one place	Better career prospects in civilian life	To make a career change while still young enough

Rating	Less than 5 years	5–10 years	10–15 years	Greater than 15 years
5	Desire for more challenging work	Lack of job satisfaction	Little reward for what would be considered overtime in the civilian community	Probable location of future postings
6	Inadequate day-to-day unit management of personnel matters	Little reward for what would be considered overtime in the civilian community	Insufficient personnel in the units to do the work	The effect of postings on family life
7	To make a career change while still young enough	Desire for more challenging work	Lack of confidence in senior Defence leadership	I have satisfied my goals in the Service
8	Under-use or non-use of training and skills	General dissatisfaction with Service life	Desire to live in own home	Insufficient opportunities for career development
9	Insufficient opportunities for career development	Lack of control over life	Impact of job demands on family/personal life	Better career prospects in civilian life
10	Inadequate information provided on my career management	Low morale in my work environment and impact of job demands on family/personal life	Desire for more challenging work	Insufficient personnel in units to do the work

Table 2. Top ten ADF personnel departure reasons, by years of service.¹⁹⁰

As of August 2010, the ADF, like the CF, is over its funded strength. In both forces, “strong recruitment and retention performance ... [and] the Global Financial Crisis” have contributed to this overage.¹⁹¹ The ADF and CF potentially face the same challenges once the global economy recovers, so retention cannot be ignored even though the ADF, like the CF, is not currently in an immediate retention crisis. While Australia is “in a better position than most countries in the developed world to deal with the impact of ageing and rising health costs,”¹⁹² it faces the same future worker shortage as Canada.¹⁹³

United Kingdom military

The United Kingdom’s (UK’s) recent Strategic Defence and Security Review (SDSR) initiated a massive defence transformation. SDSR’s most notable results are “austerity measures” that will see the UK armed forces partner closely with France for major equipment fielding, reduce capability, and drastically reduce personnel.¹⁹⁴ In terms of personnel impact, some pay will be frozen, while selected allowances, notably daily subsistence, incidental expense, mileage, home duty travel, living out supplements, specialist pay, and commitment bonuses will be either cut or reduced.¹⁹⁵ As of October 1, 2010, the UK’s trained military strength was 178,470; it had a voluntary officer outflow of 2.6 per cent, and a 3.8 per cent enlisted outflow.¹⁹⁶

UK attrition and retention studies had findings similar to those found in other forces. A 2005 UK Army attrition study found:

leavers had significantly lower job satisfaction and organisational commitment than stayers. They were also less satisfied with a number of specific aspects of Service life, most notably satisfaction with “career prospects”, “impact of Service life on family life”, “ability to plan your life” and “sense of being valued”. Leavers were also more negative in terms of their level of personal morale and motivation, perception of unit morale, cohesion and motivation, and overall Service morale.¹⁹⁷

A 2007 RAND Corporation study found major dissatisfiers were disruption, in terms of both short-term tasks and family churn; overstretch from being asked to do more with less; and some remuneration factors related to internal UK pay and complex benefits policies. The study noted two additional retention/attrition factors concerning prospects for promotion and the requirement to “improve perceived disparities among the Services.”¹⁹⁸

United States military

The US military, with 1,433,174 active duty (regular force) serving personnel as of January 2011, dwarfs Canada’s military in size and complexity, particularly the complexity of its myriad and byzantine personnel systems, programmes and policies that vary from service to service.¹⁹⁹ The US Army recruits more personnel annually than the entire CF contains; in 2009, it recruited 70,045 enlisted regular force soldiers, which contributed to a force of 458,220 full-time, uniformed Army personnel.²⁰⁰ Approximately “300,000 young Americans step forward every year” and enlist in US active duty and reserve forces.²⁰¹

Controversial programmes such as “stop loss,” a programme that “retains service members beyond their contractually agreed-to separation date”²⁰²; wars in Iraq and Afghanistan; and costly recruiting and retention bonuses overshadow any US military personnel study.²⁰³ It is difficult to find accurate statistics concerning the state of US military attrition; in a 2009 press release transcript, Deputy Undersecretary of Defense for Military Personnel Policy Bill Carr avoids the issue, vaguely asserting, “we’ve been driving [the attrition rate] down for a number of years to record lows. And our retention rate went up to record highs.”²⁰⁴ A number of salient studies exist concerning US military attrition and retention, mostly focused on the evaluation of various retention strategies and focused on statistics after the fact, not personnel study and attrition reasoning.²⁰⁵ While the RAND Corporation, in particular, offers several lengthy, detailed personnel studies, there are few in-depth US studies available in the public realm. Even US contributions to NATO study groups offer limited value and limited use to the external researcher.

Canadian Forces

The CF has a large and comprehensive body of attrition and retention research; Australia and some NATO countries have used CF survey examples and methodologies to guide their own personnel studies.

Canada uses two tools to gauge attrition and retention. Members leaving the CF have an opportunity to complete the CF Exit Survey, while CF retention surveys are administered every two years to different CF occupations on a rotating basis.²⁰⁶ Other CF research that can assist retention are the CF Health and Lifestyle Information Survey and the Continuous Attitude Survey.²⁰⁷ CF research has found dissatisfiers common to all respondents, regardless of rank or occupation. They are:

Career Management, CF Fairness, Civilianization of the CF, Bureaucracy in the CF, Senior and Branch Leadership, and CF Future. Civilianization of the CF was the only [one, single common] factor that members identified as influencing them to leave or stay in the CF.²⁰⁸

The CF's 2007/2008 *Report on Regular Force Attrition* finds that “the way the CF deals with poor performers is the greatest point of frustration,” while access to second-language training was also a dissatisfier.²⁰⁹ A recent infantry soldier retention study found that the main departure motivators were internal, namely “job dissatisfaction and career progression.”²¹⁰ Recent aircrew officer studies found the main common factors influencing the decision to leave were career progression, job dissatisfaction, and postings, all CF internal factors.²¹¹ The 2008/09 *CF Health and Lifestyle Information Survey* found personnel serving in Gagetown and Halifax reported higher job satisfaction than those in Ottawa, while CF-wide, “13.5% of personnel were ‘not too satisfied’ with their job, and 6.0% were ‘not at all satisfied.’”²¹²

CF motivation and dissatisfaction

CF pay is good, allowances are adequate, and the other “baseline” conditions that should keep personnel satisfied are in place, yet some CF members are obviously dissatisfied enough to release. Herzberg's two-factor theory defines characteristics inherent to an organization such as salary, status, policies, supervision, and working conditions as “hygiene factors,” while achievement, recognition, growth, and job interest are “motivation factors.”²¹³ He postulates that systems which lack certain hygiene factors (or suffer from poor application of these factors) will dissatisfy their employees, regardless of added motivators. Herzberg views “satisfaction and dissatisfaction not as opposite ends of the same continuum, but rather as two distinct constructs.”²¹⁴ He found:

The growth or *motivator* factors that are intrinsic to the job are: achievement, recognition for achievement, the work itself, responsibility, and growth or advancement. The dissatisfaction-avoidance or hygiene factors that are extrinsic to the job include: company policy and administration, supervision, interpersonal relationships, working conditions, salary, status and security. . . . Motivators were the primary cause of satisfaction, and hygiene factors the primary cause of unhappiness on the job.²¹⁵ [emphasis added]

CF research supports Herzberg, identifying that attrition and retention challenges are rarely from “extra” motivators the CF needs to offer, but dissatisfiers that the CF needs to reduce or eliminate. For example, many CF members are unhappy with CF posting, career management, and future uncertainty; a 2006 McKinsey report found “what many employees want most of all is clarity about their future Creating that clarity requires significant hands-on effort” from supervisors.²¹⁶

Major CF dissatisfiers, then, are not things that personnel *lack*, but are inadequacies in *how* the CF approaches or applies some of its policies. One of the keys to retention is not to *add* things to motivate personnel; it is to *remove* things, such as excessive bureaucracy, that dissatisfy them. In other words, increasing good things is less important to increasing motivation than stopping or removing bad things, since “the opposite of job dissatisfaction is not job satisfaction, but *no* job dissatisfaction.”²¹⁷ [emphasis added] The CF should change policy application or methodology to reduce dissatisfaction, rather than trying to add additional motivators or benefits to increase satisfaction.²¹⁸

Deployments and attrition—common trends

ABCA research identifies a common trend concerning deployments and operational tempo. Deployments can be both a motivator and a dissatisfier; when, what and how to decrease their dissatisfaction ability is still unknown, but a commonly held belief that deployments lead to unhappiness and, therefore, attrition is false. A 2002 study found that “Army and Marine Corps junior officers and Navy midgrade officers showed increased retention with increasing amounts of hostile deployment.”²¹⁹ Recent CF studies, specifically addressing personnel leaving the CF who served in Afghanistan, find little causal relationship between deployments and attrition, which casts doubt on the often-repeated “truth” that too many deployments cause attrition. Some survey results found “service members view deployments as an opportunity to use their training ... to participate in meaningful operations, which may be associated with greater retention rates.”²²⁰

While these findings conflict with the general view that deployments are a dissatisfier, hostile deployments provide opportunity to actually do one’s job, rather than continually practice and train. US Secretary of Defense Robert Gates remarked that “the garrison mindset and personnel bureaucracy that awaits [recently deployed officers] back home [are] often cited as primary factors causing promising officers to leave.”²²¹ Deployed US Army soldiers had a higher re-enlistment rate than those not deployed, likely due to organizational “connectedness,” belonging, investment, or not wanting to let down their comrades—a powerful motivator.²²² The *2008–2009 CF Health and Lifestyle Information Survey* supports these findings; CF psychological distress and depression rates “did not change with deployment history.”²²³ A 2007 NATO personnel study found:

A curvilinear relationship exists between OPSTEMPO [operations tempo] and turnover At very low or high levels of OPSTEMPO, personnel are more likely to leave or say that they are going to leave ... OPSTEMPO and retention varies by the context Within these extremes, there is an optimal level of OPSTEMPO that maximizes performance and reduces turnover.²²⁴

Summary

Dissatisfaction with work/life balance, being asked to do more with less, inconsistencies in approach between environments, postings, family disruption, and career management / future prospects are all common across ABCA research. However, deployments, even high numbers of deployments to hostile locations, do not necessarily lead to attrition. Deployments affect personnel in different career stages and at different ages differently—there is no blanket correlation.

7. CF attrition/retention research shortcomings

*In hindsight, it would seem that the reason for my release was an accumulation of distasteful incidents. I was never asked why, nor did anyone ever approach me and ask if there was something in particular that triggered it.*²²⁵

Given Canadian attrition and retention research contributions to various international fora, it is obviously very highly regarded internationally.²²⁶ However, it does suffer from some gaps, shortcomings, and synchronization challenges that limit its ability to provide a true attrition and retention picture. It could be improved, using existing CF resources, to round out the attrition picture and better balance research-based findings with CF-leader knowledge and assessment.

CF exit and retention surveys, the CF's primary formal method of understanding what drives personnel to release, suffer from low return rates and inconclusive findings that do not assist planning and decision making undertaken by a strategic leader:

Retention efforts are hindered by a lack of accurate, comprehensive and actionable statistics. ... Current attrition data provides insufficient fidelity regarding the motivations which lead to individuals either submitting voluntary release requests or declining further Terms of Service. Information collected from Release Centre exit surveys is gathered too late and thus offers little opportunity to provide meaningful alternatives to release.²²⁷

CF Exit Survey

Low exit-survey return rates make survey findings potentially suspect. Between June 2008 and February 2010, only 1048 of the CF's 6632 voluntarily releases completed an exit survey—a 15.8 per cent response rate, which can hardly be interpreted as a credible representative sample of the releasing population.²²⁸ A *2010 Infantry Retention Survey* had a response rate of 18.2% (660 returns of 3635); a *2007 Signals Operator Retention Survey* had a slightly better response rate of 34.7 per cent (160 of 461).²²⁹ While other NATO countries have found similar low rates of return, the CF rate appears particularly low. For example, a 2005 UK study had a response rate of 26.6 per cent, or 425 returns from 1,600 surveys issued.²³⁰

CF Exit Survey administration appears spotty—which obviously contributes to its low return rate. Five combat arms senior non-commissioned officers (sr NCOs) who released in Toronto, Petawawa, and Wainwright indicated that none had ever been asked to complete an exit survey at any point during the release process.²³¹ The value of exit surveys must be considered in light of the likely mental state of the respondents, which, due to emotion, mental preoccupation, or feelings of regret or bitterness, may not provide a true picture as to the reasons for release. “The best employee conversations should not be held during an exit interview, “when employees are leaving they will likely tell you what’s politically correct, or what you want to hear, or [that] they are moving for more money.”²³²

Exit surveys may not capture a critical releasing element—high performers who have grown frustrated with the CF and seek more satisfying, challenging employment. As a former unit adjutant identifies, high performers “tended to be really frustrated with the lack of combat opportunity or the excess admin They probably don’t fill out exit surveys either.”²³³

When a group of sailors, soldiers, or Air Force personnel understand that something, particularly something “paperwork-related,” is optional, their automatic response is to avoid it. While supervisors can order personnel to complete surveys, scientifically credible surveys cannot be based on results that are coerced. If coerced responses are, from a research perspective, prejudicial to proper analysis, the CF could seek a middle ground by borrowing a technique from business. Many businesses offer a reward, normally entry into a sweepstakes draw, for completing satisfaction surveys.²³⁴ Administering surveys at eight o'clock on a Friday morning and offering soldiers the remainder of the day off after survey completion would likely result in high, enthusiastic, and honest survey participation. This technique could provide a similar response pool to voluntary surveys, with a response rate comparable to a coerced survey. While one could scoff at the idea of rewarding CF personnel for doing something they should be doing when ordered, this method could bridge the current “survey response gap” and achieve better return rates.

At present, each CFB's personnel selection officer administers the CF Exit Survey to releasing personnel.²³⁵ However, as this section's opening quote indicates, it appears that some personnel miss their exit survey opportunity during the out-clearance process.²³⁶ Making the chain of command responsible for exit surveys could improve response and ensure that every releasing member is at least properly encouraged to complete an exit survey.

Attrition reasons by age and career stage

Reasons for attrition/retention differ by years of service, a factor which CF research has yet to fully address. Some CF surveys fail to correlate years of service, or survey respondent age, to results.²³⁷ "A critical element missing is that the study [a recent retention study of pilots and air combat systems officers] does not delineate between the 23 year old 2LTs and the 38 year old Majors."²³⁸

Both the Australian results above and specialist opinions provided by experienced CF leaders demonstrate that motivators change as careers develop. Two fighter pilot lieutenant-colonels noted, during separate correspondence, that motivators for brand-new captains who recently earned pilot's wings are very different from motivators for 40-year-old majors who may have seen their last flying jobs.²³⁹ While this factor may seem intuitive, research draws very few solid conclusions relating motivators and dissatisfiers to years of service.

Personnel issues are not a unified block with single, unrelated solutions for every dissatisfier. Rather, CF personnel differ "by age and by [career] stage," which is, of necessity, a moving target, but a factor of CF life.²⁴⁰ The "age and stage" correlation appears sharply in assessments of deployment and operational tempo's retention effects. Deployments can both motivate and dissatisfy, depending on individual age, career stage, the nature of the deployment and a host of other factors that cannot be easily quantified or statistically analysed.²⁴¹ There is often no single factor that drives CF personnel to release, but a confluence of factors, a "death of a thousand paper cuts" that finally pushes them to release. Many CF members with more than 20 years of service, who are entitled to a release in 30 days and qualify for an annuity on request, indicate they are serving "on a 30+1 program—one more stupid direction and I'm out in 30 days."²⁴² CF leaders support this thinking:

I found that it was the little things that forced troops out, not the "*big things*" (pay, tour length, etc.). Just like the expression, "*all politics is local*," I think every CF's member's overall experience within the CF is based on the sum of individual encounters and experiences, vice an overall impression, guided by those aforementioned "*big things*."²⁴³

An example of this confluence of small factors can be seen in the example of a CF member who is passed over for deployment because they are "too valuable" in their present employment. Despite their "value," they are posted to an undesired location where they work for a supervisor they have little faith in. This person may well decide that their skills could be better used in the civilian world.²⁴⁴ If surveyed, no one factor would stand out as "the" dissatisfier that made them release, but compounded, the successive and complementary effects of a series of small dissatisfiers could be enough to push them out.

Chain-of-command input

In any organization, there is a gap between management and labour or between headquarters and ground truth. In attrition and retention research this gap exists on several levels. CF defence

scientists are dedicated, academically qualified, credible, and genuinely believe in improving the CF through their research, study, and recommendations. However, their efforts suffer from a lack of institutional synchronization:

There is a “missing link” between the sorts of studies generally carried out by social scientists ... and the type of work done by those who usually have a more mathematical or scientific background ... All of the documents reviewed in this study fell quite clearly into one category or the other; no reports appeared to represent a joint effort between the different types of researchers.²⁴⁵

In addition to the “intra-researcher gap” noted above, there is a gap between researchers and the CF population. Current attrition/retention research reveals a dearth of input from one very important area—the military chain of command. Defence scientists are often, by virtue of location and methodology, divorced from all the various elements that make up the CF’s reality. Scientific survey and statistical assessments lack a certain context that can only be provided by someone experienced in CF service. This shortcoming can be easily rectified with organizational and command commitment to learning from its own leaders and capturing their knowledge, assessments, and insight.

Anthropologists debate whether it is better to be an “out group”—observing from outside an organization and potentially lacking context—or observing from an “in group” perspective—inside an organization and understanding context but, potentially, having one’s thinking coloured by group membership. Anthropologist Dr. Clifford Geertz identified the necessity of balancing perspectives:

If we are going to cling ... to the injunction to see things from the native’s point of view, what is our position when we can no longer claim some unique form of psychological closeness, a sort of transcultural identification, with our subjects? ... Confinement to experience-near concepts leaves an ethnographer awash in immediacies as well as entangled in vernacular. Confinement to experience-distant ones leaves him stranded in abstractions and smothered in jargon ... How, in each case, should [the two concepts] be deployed so as to produce an interpretation of the way a people live which is neither imprisoned within their mental horizons, an ethnography of witchcraft as written by a witch, nor systematically deaf to the distinctive tonalities of their existence, an ethnography of witchcraft as written by a geometer?²⁴⁶

Involving the chain of command in research and integrating its input captures the best of both worlds while mitigating potential imbalances caused by insider or outsider status. Neither the CF leader who is a member of the organization nor the defence scientist who is an outsider can achieve full understanding from a single perspective. Since “the idea is to get it right, ... to aspire to get to the heart of the matter, [and] to distinguish the important from the trivial,”²⁴⁷ the two perspectives should be combined to provide the best possible understanding.

CF leaders are inculcated to put their subordinates before themselves, while the CF’s guiding leadership precepts insist that leaders follow the principles in Table 3.

1973/1978 Principles of leadership	Equivalent responsibilities in 2005
Achieve professional competence.	Achieve professional competence and pursue self-improvement.
Know your own strengths and limitations and pursue self-improvement.	
Seek and accept responsibility.	Seek and accept responsibility.
Lead by example.	Direct; motivate by persuasion, example, and sharing risks and hardships.
Make sure that your subordinates know your meaning and intent, and then lead them to the accomplishment of the mission.	Clarify objectives and intent.
Know your subordinates and promote their welfare.	Treat members fairly, respond to their concerns, and represent their interests. Monitor morale and ensure subordinate well-being.
Develop the leadership potential of your personnel.	Mentor, educate, and develop subordinates.
Make sound and timely decisions.	Solve problems; make timely decisions.
Train your subordinates as a team and employ them up to their capabilities.	Train individuals and teams under demanding and realistic conditions.
Keep your personnel informed of the mission, the changing situation, and the overall picture.	Keep subordinates informed; explain events and decisions.

Table 3. CF leadership principles²⁴⁸

CF leaders have proven their ability to intimately know and care for personnel in both war and peace. The opinions of Navy divisional officers, Army unit adjutants and subunit commanders, Air Force flight commanders, ships’ coxswains, Army-unit regimental and Air Force–squadron sergeants-major are invaluable. These leaders have insight, context, and in-depth understanding of their personnel and are able to articulate dissatisfiers, trends, points of contention, and release reasons extremely clearly, bringing life and context to statistical or survey findings. Most have dedicated the majority of their adult lives to CF service, earned positions that offer them the rare ability to understand their organizations intimately, and have CF-centric insights on personnel motivations, challenges, and situations. They can offer context, while their opinions, if properly collated and tracked, can identify geographic, deployment-related, local-economy related and other factors that current research cannot. CF research does not currently incorporate any input, anecdotal or otherwise, from ship, unit, divisional, or subunit leaders. While this input is used in matters of training, equipment, and operations planning, it is not used for personnel matters, a failing in a relatively small force like the CF.

Summary

Current CF research does not adequately bridge the gap between hard science and soft personnel understanding. Survey return rates are rarely sufficient to be properly representative, while their analysis provides little useable large-picture attrition insight. As a result, CF strategic personnel planners only know portions of the attrition/retention story. No single overriding factor makes a CF member decide to leave. Rather, a confluence of factors creates a “perfect storm” and spurs the decision. By using the chain of command and integrating the observations, context, insights, and opinions that CF leaders offer, the CF can build a much better, more comprehensive picture of its current attrition and retention situation.

8. Military retention methods and their effectiveness

*Make the Army community a fun place to work and live. ... If the Army can offer the camaraderie and cohesion desired (and often lacking in the civilian world), ... then Xers will stay regardless of the economic situation.*²⁴⁹

The CF *MPRS*, produced in March 2009, offers a concise, integrated campaign plan for the CF to reduce preventable attrition. It focuses institutional efforts and identifies those responsible for achieving milestones along its lines of operation.²⁵⁰ While its results remain to be seen, it is a systemic, long-term commitment to fostering a “retention culture” in the CF. At present, one cannot fully assess the effectiveness of the strategy, much as one cannot assess many retention efforts that do not involve solid metrics identifying money spent versus retention statistics. Unfortunately, for non-cash retention efforts, the indicators are nearly always lagging and negative—an organization finds out only “after the fact” that something does not work.

One retention method used across several forces that does offer effectiveness metrics is the retention bonus, providing cash payments to foster continued commitment to further service or reward re-enlistment. Due to the CF’s close proximity to the US, where large military retention bonuses have garnered media attention, retention and bonus seem interconnected. Overall, the CF groundswell of opinion, particularly from junior members’ perspectives, is in favour of retention bonuses.²⁵¹ However, retention bonuses are a short-term measure that either generally do not work as intended or are prohibitively expensive.

ABCA retention bonuses

Australia offers cash retention bonuses to certain service members in critical trades and ranks who, after reaching 15 years’ service, undertake to serve for an additional 5 years.²⁵² These bonuses range from \$45,000 [Can\$45,085] for mine warfare clearance diving officers to a \$1,339 [Can\$1,431] annual retention allowance to aerospace engineer captains.²⁵³ The Australian Army has a retention programme that “offers financial incentives to encourage soldiers with non-trade employment backgrounds to train and transfer” to technical trades.²⁵⁴ Australia assessed that bonuses are effective and intends to continue their short-term use for critical trades where loss of skills “will have a detrimental impact on operational or supporting capabilities.”²⁵⁵

Prior to SDSR, the UK military offered several financial retention incentives as seen in Table 4.

Occupation	Amount	Take-up rate
Aircrew senior officer	£50,000 [Can\$89,950] for a five-year term	Royal Air Force 105%
Aircrew senior pilot	Additional £50,000 [Can\$89,950]	Royal Air Force 81% Royal Artillery 59%
Infantry	£4,500 [Can\$8,095] for 2 years return service	48%
Royal Marines	£10,000 [Can\$17,990] including commitment bonus for 3 years	55%
Nurses	£20,000 [Can\$35,980] for 3 years	19%

Occupation	Amount	Take-up rate
Special Forces	£50,000 [Can\$89,950] for 5 years	93%
Submariner (categories A2)	£25,000 [Can\$44,975] for 4 years' return service	Introduced April 2008
Submariner (categories B2)	£20,000 [Can\$35,980] for 4 years' return service	90% between 2003 and 2007, extended until April 2012
Royal Artillery	£45,000 [Can\$80,955] for 3 years' return service	Introduced April 2008
REME (Royal Electrical and Mechanical Engineers)	£7,000 [Can\$12,593] for 3 years' return service	Introduced April 2008
Royal Air Force Firefighters	£9,000 [Can\$16,191] (including £3,000 [Can\$5,397] commitment) bonus for service to the 7.5-year point	Introduced April 2008
Royal Air Force Regiment Gunners	£10,000 [Can\$17,990] (including £3,000 [Can\$5,397] commitment) bonus for service to the 7-year point	Introduced April 2008

Table 4. UK Armed Forces financial retention incentives and take-up rate

Between 2000 and 2008, the US military spent “\$1.4 billion [Can\$1.52 billion] in selective re-enlistment bonuses,”²⁵⁶ much of it under the US Army’s very complicated Selective Retention Bonus programme.²⁵⁷ On average, each additional person-year of service costs between \$8,292 [Can\$9,047] for Army and \$67,378 [Can\$73,516] for Air Force in bonuses for first-term re-enlistments, while second term re-enlistments cost, on average, between \$15,513 [Can\$16,926] (Army) and \$112,175 [Can\$122,394] (Air Force) for each year of additional service.²⁵⁸ Recent reports indicate that US cash bonuses helped retention, which can be effective when properly applied, in the short term.²⁵⁹ The US military has not always applied them properly:

The US Army was trying to staunch the flow of CPTS [Captains]. So it offered retention bonuses of \$30,000 [Can\$32,730] to all officers. The bonuses achieved nothing since those who took it were going to stay anyway and those who turned it down left anyway.²⁶⁰

This method is akin to throwing a handful of darts at a board and hoping one will stick into the bullseye; an outstanding solution if one has unlimited darts or unlimited funds. However, the CF cannot afford this approach, nor can research determine “a causal relationship between cash rewards and people’s enlistment and reenlistment behaviours.”²⁶¹

Retention bonuses can have adverse long-term effects, fostering expectations of a continuing entitlement, retaining personnel with low commitment and loyalty as well as rising perceptions of unfairness [between service personnel entitled and those not entitled to retention bonuses]. However these potential implications have not been confirmed by scientific studies.²⁶²

Given retention bonus' expense and potential adverse effects on the CF, a better solution would be preventative rather than reactive.²⁶³ Correcting, eliminating, or mitigating the dissatisfiers that contribute to attrition obviates the requirement for retention bonuses. Why address the symptoms of a problem with a Band-Aid solution when the problem itself can be pre-empted or prevented? Monetary efforts including retention bonuses “can be turned on and off relatively easily and quickly” but should not be integral to long-term CF retention efforts.²⁶⁴ Even in the business world, where employees often lack the military member's higher calling, operational imperative, organizational cohesion, and sense of purpose, “money alone won't do the trick. ... Praise from one's manager, attention from leaders, frequent promotions, opportunities to lead projects, and chances to join fast-track management programs are often more effective than cash.”²⁶⁵

ABCA non-cash retention methods

The UK offers non-cash retention programmes designed to set advantageous financial conditions for those with long service. The UK Long Service Advance of Pay (LSAP) assists qualified personnel to enter the housing market or meet changes in housing needs “arising from changing personal circumstances.”²⁶⁶ It offers eligible personnel an advance on their pay at an advantageous interest rate to a maximum of 8,500 British pounds [Can\$13,685].²⁶⁷

The UK Army's Career Break programme “offers limited opportunities for Service personnel to take a career break where this does not compromise operational effectiveness.”²⁶⁸ During career breaks, service personnel receive no pay and are posted out of their units, allowing backfills to be posted in to replace them.²⁶⁹ RAND Corporation studies support the use of breaks or sabbaticals as a retention and motivation method.²⁷⁰ While the CF has a policy governing leave without pay (LWOP), which CF personnel can apply to take, it is not used as a retention incentive and is not as flexible or well defined as the UK Career Break programme.²⁷¹ At present, LWOP is an untapped potential CF retention resource.

Australia takes the view that “the total ADF employment package ... embraces a range of financial and non-financial benefits,”²⁷² some of which have emerged as retention contributors:

The new Defence Home Ownership Assistance Scheme is also a retention initiative to encourage ADF personnel to serve for longer periods by providing progressively higher home loan subsidies to permanent members who serve beyond the critical departure points of 4, 8 and 12 years.²⁷³

The US Army employs retention NCOs, working at the battalion or unit level, as a non-cash retention method. These soldiers counsel, re-enlist, or extend “qualified soldiers in the Army,” supervise retention activities, conduct retention interviews, and advise commanders on retention matters and programmes.²⁷⁴ US Army units also appoint soldiers as company-level retention NCOs as a secondary duty:²⁷⁵

My role was an additional duty at the company level. Every quarter I would get a list of soldiers who were 6 months out from their ETS [completion of service] date. I would meet with each to discuss their options. ... If they did want to enlist were there any training or new job options for them. ... Once I met with the soldier I would report back to the BN [battalion] retention NCO regarding next steps. Often for those soldiers who were undecided, there was a selling process to encourage them to stay (or go in some cases!) ... Following the soldier's decision I would help

coordinate either the reenlistment or separation I thought it was a great concept for a couple of reasons—I knew the soldiers so could often sell the right idea (new duty location / airborne school, etc.). I was part of the unit and did the same jobs, training, hardships etc., so I was trusted by them I think all volunteer armies can really benefit from this—the old adage is it is much easier to keep a customer (soldier) than find a new one (train them) is very true.²⁷⁶

Summary

While it is tempting to view retention as an economic function, where a force can spend its way to personnel success, this is not the case for the personnel of today and will not be the case for the personnel of tomorrow. Generation Y believes “if you’re not happy, it doesn’t matter how much money you’re making.”²⁷⁷ Money is necessary but not sufficient to retain good people,²⁷⁸ “pay level and pay satisfaction are generally weaker predictors of individual turnover” than other considerations.²⁷⁹

If soldiers felt that the work, training and deployments were meaningful, relevant and challenging, they were more likely to stay. If they held more negative views, they were more likely to leave. Another component to the nature of deployments and their impacts was the context within which it occurred. If soldiers regarded the experience as personally or professionally enhancing, they were less likely to want to leave.²⁸⁰

Retention must encompass a range of options to reduce dissatisfaction, recognize personnel, offer fair and equitable conditions of service, and mitigate dissatisfaction. “Targeting retention measures at the right people using a tailored mix of financial and nonfinancial incentives is crucial.”²⁸¹ The current CF *MPRS*, while not perfect, is a balanced and multi-channel approach, which has shown “immediate positive impacts.”²⁸² Future retention efforts must continue to reflect the changing CF personnel environment and incorporate measures to enhance motivation and, therefore, retention across the personnel spectrum.

9. Unintended consequences: Why people leave and how to mitigate

*Men and women in the prime of their professional lives, who may have been responsible for the lives of scores or hundreds of troops, or millions of dollars in assistance, or engaging in reconciling warring tribes, they may find themselves in a cube all day re-formatting power point slides . . . the consequences of this terrify me.*²⁸³

The CF maintains a number of programmes to mitigate the adverse effects of service on personnel and their families. Given the CF’s high conditions of service standards, good pay rates, cash and non-cash allowances as well as benefits, it seems inconceivable that CF personnel would find service anything but completely satisfying. However, research has found exactly that dichotomy; some personnel are so dissatisfied that from 2006 to 2008, CF attrition approached 10 per cent. Studies have found that there is no one single factor, across a series of surveys, which drives CF personnel to release. There is also, in objective terms, very little “missing” that CF personnel want for in terms of pay or benefits. However, continuing themes in CF attrition research, supported by other ABCA research findings, show that reasons internal to the CF are dissatisfying its personnel.

The 2007/08 report on Regular Force attrition identifies that half of those surveyed “found that service life has been worse or much worse than expected.”²⁸⁴ Some dissatisfiers are part and parcel of

CF service and cannot be changed; the Navy must send ships to sea, foreign deployments are part and parcel of Army life, while long flights and time spent in remote locations are part of Air Force life. There are other dissatisfiers, many of them internal to the CF, which alone are not important enough to consider making a career change for, yet when combined and compounded, form a body of dissatisfaction that can drive CF personnel to release. An Australian study recommended that “the ADF could significantly improve personnel retention by widening its strategies to include intrinsic issues rather than confining them to extrinsic issues like remuneration.”²⁸⁵

In the civilian world, separations happen “on account of trivial reasons like office timing or office ambience/atmosphere not being comfortable.”²⁸⁶ This confluence of multiple factors is different for every CF member and has not yet been formally studied. However, the body of knowledge held by CF leaders throughout the chain of command can shed some light on these small factors and identify how they contribute, in their own way, to the attrition challenge.

These factors are grouped according to the general effect they have on CF personnel. “Institutional honesty” refers to theory versus practice or how the differences between stated aims and practical policy implementation affect CF member satisfaction. “Quality of employment” refers to how satisfying, rewarding, and relevant CF employment is. Many studies and initiatives have focused on quality of life, but none focus on the quality of employment.²⁸⁷ “Institutional connection” refers to how “connected” various parts of the CF are to each other, primarily up and down the chain of command, and how this connection, or lack thereof, affects attrition and retention.

Institutional honesty

A perceived disparity between what the CF says and what it does, between what CF personnel perceive the CF to “be about” and what the CF actually is, lies at the heart of institutional honesty:

Although creativity and innovation tend to be highly esteemed by the [US] Army in its rhetoric ... “the reality is that junior officers are seldom given opportunities in planning training; to make decisions; or to fail, learn, and try again.” ... Lack of authority may neutralize a leader’s effectiveness, while detailed planning may substitute for leadership.²⁸⁸

Disparities and shortcomings in personnel/career assessments, treatment of poor performers, second language training as well as honours and recognition are all CF internal institutional honesty dissatisfiers that merit further explanation.

Annually, the CF assesses personnel competitively, by rank and occupation, against each other, in terms of both current performance and perceived potential. Each CF member receives an annual personnel evaluation report under the aegis of the Canadian Forces Personnel Appraisal System (CFPAS). “The aim of CFPAS is to develop CF members through constructive feedback and to accurately assess the level of demonstrated performance and potential for career administration purposes.”²⁸⁹ CFPAS is several years old; given the personnel learning and skill effects of recent CF operations, it lacks relevance. The personnel evaluation shortfall is not unique to the CF, it has been noted that other forces. “in the US military, despite several years of war,” not just the Army, but also the Air Force, Navy and Marines—have changed almost nothing about the way their promotional systems and entire bureaucracies operate.”²⁹⁰ US studies note: “Performance Evaluations emphasize a zero-defect mentality, meaning that risk-avoidance trickles down the chain of command.”²⁹¹ While CF lacks the challenges and shortfalls in trust and credibility between US military senior and

junior officers, improper personnel evaluation methods can have negative strategic impact if they are not viewed as credible or relevant.²⁹²

Modern operations demand leader knowledge, skills, and abilities, particularly in the case of majors and lieutenant-colonels, which previously were the purview of colonels and general officers. Personnel evaluation systems must reflect the changing institution; current CFPAS assessment criteria “do not reflect what operational commanders are looking for in today’s officer,” such as:

1. Strategic cognition in both staff and command functions.
2. Written and verbal communication for complex subjects.
3. Working as part of a team, inspiring and enhancing unity, often in joint, interagency, multinational and public settings.
4. Physical and mental fitness and endurance.
5. The ability to lead the institution and offer guidance within strategic frameworks, particularly under long-term periods of stress.²⁹³

CF senior, general and flag officers are not assessed according to these criteria; perhaps they and their subordinates should be.²⁹⁴

CFPAS assesses all CF general service personnel below the rank of colonel, save chief warrant officers, using the same evaluation form and criteria. In a practical context, the captain of a frigate, normally a Navy commander with upwards of 20 years’ experience, a sergeant commanding an infantry section in combat with 10 or more years’ experience, and a newly-qualified military police corporal with 2 years’ service are assessed and provided feedback from their supervisors using the same pro-forma.²⁹⁵ While a common assessment form is administratively easy to implement and demonstrates fairness and equity, it sends a poor message. Not everyone in the CF is the same; the fact remains that the CF is a hierarchy, where personnel of different ranks, different occupations and different experience levels have differing levels of authority, responsibility, and expectation. CFPAS does not reinforce this CF cultural norm and reflects a gap in CF institutional honesty.

Reworking and updating CFPAS to reflect differences in CF service by rank and position could go a long way to mitigating some career dissatisfaction. Military analyst Fred Kagan recommends the US Army implement 360-degree assessments to ensure better accountability and effective leadership in the future force.²⁹⁶ These types of assessments may not be sound for the CF, as they could make leader evaluations a popularity contest where managing subordinate impressions becomes more important to the leader seeking a favourable 360 assessment, rather than making difficult decisions and issuing unpopular, albeit necessary, orders. However, including some measure of subordinate input in leader assessments may better round out leader evaluations, increasing both assessment fairness and effectiveness.

The CF’s current drug policy identifies a disparity between what is stated and what is done.²⁹⁷ In June 2010, the Chief of the Defence Staff remarked, “We do not accept drugs at all in the Canadian Forces, especially with all our operational missions.”²⁹⁸ CF publications and statements by senior leaders have also identified the CF’s zero tolerance policy concerning drug use.²⁹⁹ To a layperson, zero

tolerance should ostensibly mean that drug users are not tolerated and not permitted to serve. CF drug control policy differs from this view: “The CF is committed to a drug-free workplace by providing the appropriate tools and information to reduce or eliminate the drug-risk behaviours of CF members.”³⁰⁰ The CF Drug Control Program’s essential elements are “education, detection, treatment and rehabilitation.”³⁰¹ The *CF Drug Control Policy Manual* further identifies that in the event a CF member is a drug user, the Director Military Careers Administration (DMCA) conducts an administrative review:

DMCA is the sole authority to conduct administrative reviews and to order administrative measures [including release from the CF] against any CF member for involvement with illicit drugs. ...

As a general principle, the appropriate administrative action is the one that best reflects the degree of incompatibility between the CF member’s prohibited drug use or other involvement with drugs and the CF member’s continued service in the CF.³⁰²

This policy focuses on drug user rehabilitation and centralized assessment, rather than punishment or swift administrative or disciplinary action, by the drug user’s chain of command. In fact, it leaves very little discretion to commanding officers (COs):

DMCA will issue specific instructions to the CF member’s commanding officer regarding the conduct of the administrative review. ... The CO must offer new TOS [terms of service, meaning the offer of further employment] even though a member is under an Administrative Review for drug use.³⁰³

COs command vessels that can have strategic worldwide effect, they can order soldiers into harm’s way, can authorize lethal weapons use, and are responsible for protecting Canadian airspace and safeguarding Canadian citizens from coast to coast. However, despite the fact that they are responsible for many lives, millions of dollars’ worth of equipment, lethal weaponry, and the ability to use it, COs are permitted very little leeway to enforce the CF’s stated zero tolerance drug policy, including ordering drug testing without a series of bureaucratic and legally-perilous steps.³⁰⁴ In fact, the phrase “zero tolerance,” while publicly stated, does not appear in any official CF policy or guidance document concerning drug use.³⁰⁵

Junior CF personnel who see drug users retained in the CF, offered education, rehabilitation, and counselling, while—in many cases—still serving in their units and still collecting a paycheque based on their rank (the same paycheque that non-drug users collect) see glaring dissonance. To CF leaders, the inability to take direct, quick action to correct drug use and enforce zero tolerance is a dissatisfier that saps their authority, makes the drug policy seem toothless, and makes senior leaders’ words seem hollow. As drug users cannot deploy, in many cases they miss some of the hardships, time away, risk, and threat that their “clean,” deployable comrades undergo. CF drug policy is an example of the difference between expectations and actions that act as a dissatisfier with regards to treatment of poor performers. The discrepancy between stated and actual expectations contributes to dissatisfaction and builds towards that confluence of multiple factors that can influence a CF member to leave. Allowing COs the authority to take swift, public action against drug users and actually making CF drug policy “zero tolerance” will increase CF policy credibility, capability, and commitment and reduce the dissonance between stated policy and its application.

The CF is a bilingual institution whose linguistic spectrum is governed by a robust body of official-languages (OL) regulations, policies, guidance, direction, and reviews.³⁰⁶ As CF members increase in rank, should they expect further promotion and further responsibility, they must continue to move more and more towards being bilingual. Non-bilingual officers, in particular, who wish to advance, are required to improve second language performance consistently.³⁰⁷ While not required to maintain as high an institutional focus on bilingualism, NCOs, as they increase in rank, are also expected to become more and more bilingual.

CF OL statistics indicate inconsistent bilingualism policy application. In 2009, only 8 per cent of Anglophone NCOs and 56 per cent of Francophone NCOs had valid second language test (SLT) results. While officers were slightly better, only 62 per cent of Anglophone and 87 per cent of Francophone officers had valid SLT results, including 69 per cent of Anglophone captains and 95 per cent of Francophone captains.³⁰⁸ By not ensuring that its personnel have valid language test results, the CF perpetuates a gap in following its own policies.³⁰⁹

This disparity continues into the availability of Second Official Language Education and Training (SOLET). While it would appear, from an examination of policy and public statements, that second language training would be offered when, where, and how it is required by CF personnel, “for the past several years, SOLET has not been based on training requirement but rather on availability of candidates to undergo training.”³¹⁰ So, despite comprehensive OL policies, which sees bilingualism affect promotions, employment, and advancement, the CF has not made its personnel available for language training or offered its personnel language testing and training that matches its policy aims. This disparity reflects an institutional honesty challenge that contributes to the confluence of factors that dissatisfy CF personnel.

Napoleon allegedly proclaimed that he could motivate soldiers to perform great deeds for a few scraps of ribbon and a shiny medal. Elton Mayo’s 1930s factory worker experiments identified the Hawthorne Effect; despite poor conditions, leader attention and recognition motivate people and increase their satisfaction.³¹¹ People who feel that their superiors and the larger organization recognize and acknowledge their efforts are happier and more motivated; logically, they would be more amenable to remaining in an organization that validated their efforts. CF honours-and-recognition policy seeks to reward exceptional performance, service in unusual circumstances as well as long and distinguished service by awarding CF personnel tangible symbols of achievement that they wear on their uniforms. However, if applied inconsistently, recognition methods can de-motivate personnel. CF personnel are often dissatisfied enough to release when they “felt their good work was not being acknowledged.”³¹² A comment from a recent CF leader survey identifies:

A critical component missing [in discussions of Quality of Life] is that of Honours and Awards. There still remains a large discrepancy in who receives what for certain action, or inaction for that matter I offer that our poor conduct of Honours and Awards is a lead contributor to dissatisfaction³¹³

An example of honours and recognition indicating institutional honesty shortcomings is that of personnel appointed to the Order of Military Merit (ORMM). The ORMM is “the pre-eminent form of recognition for long term merit in the CF”; its three levels—Commander of the Order of Military Merit (CMM), Officer of the Order of Military Merit (OMM), and Member of the Order of Military Merit (MMM)—reflect a recipient’s relative level of responsibility.³¹⁴ ORMM guidelines stipulate:

CMM for Gen/flag officers, OMM for senior officers, MMM for all others. ...

OMM appointments should normally be distributed evenly between Capt(N)/Col, Cdr/LCol and LCdr/Maj. ...

Approximately 30 per cent of MMM appointments should be allocated to PO1/WO and below. ...

All candidates should ideally be between 18 and 23 years of service.³¹⁵

The 61st ORMM list of January 2011 saw an OMM breakdown of 1 chief warrant officer, 2 majors (Majs), 11 lieutenant-colonels (LCol), 7 colonels (Col) and 1 brigadier-general (BGen); incidentally, the latter three rank categories generally all have more than 23 years' service.³¹⁶ Given that 23 OMM were awarded, the guidance above indicates that 7 of the recipients should have been Maj, 7 should have been LCol and 7 Col.

The Maj awards are particularly at odds with the guidance, achieving only 28 per cent of the suggested number of awards. Most Majs fall into the well-identified small, mid-service cohort, whose hard work often sets the conditions for LCol and Col promotions, advancement, and recognition. These personnel are also generally generation-X members, whose retention will be critical to the CF's future. Yet, the CF is reluctant to follow its own guidance in equitably recognizing this cohort's long-term career performance and merit. This factor is particularly distressing, given that civilian research indicates "high performers are more likely to stay when ... contingent rewards are available."³¹⁷

While it is unlikely that a CF member will release because they were not awarded a medal, this factor—compounded with pension availability, posting dissatisfaction, career dissatisfaction, and family work-life pressures—could be "the straw that breaks the camel's back" and creates the tipping point for a release decision. CF leaders identify that "it is the guys who are just under the radar that seem to flee. Those who are competent, work hard in supporting roles but may not be the ones who consistently stand out."³¹⁸

CF recognition, then, should follow its own stated policies, reward personnel for performance, and motivate them to continue performing by institutionally recognizing and appreciating their efforts. The CF must avoid the situation found in some services, notably the US Air Force,³¹⁹ where a plethora of commonly-awarded medals and awards detract from the intent of recognition and become meaningless. However, there is a middle ground that can be achieved to recognize, and therefore motivate, CF personnel through provision of honours, particularly if this middle ground is in line with CF guidance.

Quality of employment

Quality of employment (QoE) refers to the satisfaction, pride, and perception of worth that CF personnel feel about their work;³²⁰ it is closely linked to the desire CF personnel have to actually do their job.³²¹ Often, aspects of CF service may not be particularly satisfying. When CF personnel have a close, familial bond with their comrades, and when their job protects Canadian citizens or contributes meaningfully to an entity beyond the individual CF member, this total spectrum of employment increases "employment quality." Since CF personnel spend the majority of their waking hours at work, making work relevant, challenging, worthwhile, and important is a significant factor. QoE can keep a CF member serving despite the potential for greater financial rewards outside the CF.

“While earnings and benefits have only a two percent impact on job satisfaction; job quality and workplace support have a combined 70 percent impact.”³²²

However, poor QoE can have the effect of making CF service little more than “a job” and its personnel little more than individuals listlessly completing day-to-day tasks. QoE shortcomings, noted by experienced CF leaders, encourage attrition:

1. Poor leadership and supervision.
2. Not having the opportunity to “do the job”—disparity among those who deploy and those who don’t.
3. Lack of authority and responsibility at the lower levels—not feeling trusted to do their jobs and make decisions.³²³

The top rated long-term civilian retention drivers are exciting work and challenge; career growth, learning and development; and “working with great people and having good relationships,”³²⁴ all characteristics inherent in CF service, particularly if QoE is good. A January 2011 Ipsos-Reid poll found that “Canadians don’t confuse the CF with being armed aid workers. They are soldiers. But, soldiers who are capable of handling a diversity of missions based on need. The warrior spirit is an attitude, not a task or mission.”³²⁵

CF warrior spirit is embodied most strongly and publicly by the “Fight” media campaign. Centred on television commercials offering realistic views of a broad spectrum of CF employment, it entices applicants to “Fight with the Canadian Forces.”³²⁶ While not every CF occupation fights armed enemies, an attitude of decisive action and focus should permeate the CF. When bureaucracy stifles initiative and ambition, when soldiers do not endure challenging and arduous training, when pilots cannot fly, when sailors cannot sail, their QoE, and therefore motivation, drops:

At the 21 year mark of my career, I was the SQ [squadron quartermaster, responsible for all supply and equipment accounting] of a tank [squadron]. During my tenure there, I went through the emotional trauma of having to turn over the tanks to long-term preservation ... signifying a quantum shift in the direction my Regiment was going. For a soldier who joined specifically to be a tanker, this was a huge emotional hit. Upon completion of that distasteful task, I was posted to an Area [headquarters]. This coincided with the beginning of the large-scale deployments to an operational theatre [Afghanistan]. The scope of my job was to fill positions via CFTPO [Canadian Forces Task Plans and Operations] for foreign taskings while I sat in an office. That in itself was hugely distasteful.³²⁷

Some CF members are dissatisfied with their current military occupation, yet changing occupations is often administratively difficult. In fact, some soldiers release from the CF with the intention of re-joining in a different occupation due to the administrative difficulty of changing occupations.³²⁸ The fact that occupations which are short-manned often forbid transfers out compounds the administrative difficulty of reclassification. Unfortunately, closing an occupation to transfers out can create the false impression of personnel management success. If members are dissatisfied with their current military occupation, they will seek to rectify this dissatisfaction, whether an occupation forbids transfers out or not.

If a soldier determines that they would rather be a naval weapons technician than an infanteer and is serious enough in their intentions to undertake the administration required for an occupation transfer, they have crossed a significant mental boundary. If informed that infantry is too short-manned to permit any transfers out, it is extremely unlikely that the soldier will decide that they do, in fact, wish to continue serving in the infantry and suddenly develop a newfound satisfaction with it. In terms of organizational behaviour, equity theory identifies that dissatisfied people will reduce dissatisfaction either by modifying their inputs and outcomes by changing occupations or quitting their job.³²⁹ If the soldier feels their only choice is to release, then they will.

Rather than viewing occupation transfers (OTs) as a loss to one occupation, the CF should view it as a shift in capacity that, while not perfect, benefits the CF more than a member electing to leave service completely. If a soldier elects to leave the infantry through release or OT, the departure is a sunk cost to the infantry. However, it is not a loss to the greater CF. Although career managers are loath to lose personnel, it is strategically better to retain CF members in service in any occupation than lose them completely.

Modifying this thinking will require a mental shift from one where career managers seek to protect their own occupation to one that realizes that while releases are a total loss, OT retains some CF benefit. If the CF makes OT easier and potentially uses it as a retention method, it may well retain personnel who would otherwise have been so dissatisfied as to release.³³⁰ In order to encourage soldiers to remain in CF service on completion of a contract of service, the CF could consider offering OTs as an incentive to remain in service. This has the potential to reduce occupational dissatisfaction and offer personnel a way to change dissatisfying work conditions, while retaining them in the CF.

The effects of poor long-term QoE and personnel frustration manifest themselves as release decisions that overarch the potential for future rewarding and eminently satisfying positions:

My career is entering a phase of near exclusive staff jobs that quite frankly is not especially motivating for me right now. I am sure I would have been given a CO's job at some point in the future, but the where and when are completely uncertain. When it came right down to it, I really cannot justify uprooting my family again for something I am only marginally motivated to do, and with such an uncertain future. ... *I am just way too tired of being asked to do so much with too few resources, and quite honestly I don't see this getting better any time soon.* The last 6 months have been the most unmotivated I have ever been towards my job. Mentally, I just need to change what I am doing.³³¹

Army leaders identify:

Guys who break contract have tended to be really frustrated ... by a system that seems to coddle the junk troops [sic]. These are the guys who only want to fight and do PT [physical training], and don't want to spend time behind a desk (even if that desk-time gave them the opportunity to fix the problems that frustrate them), and short of becoming NCO Assaulters or SAR [search and rescue] Techs [both challenging, physically demanding, yet satisfying occupations], there probably aren't many career-long prospects that would hold these guys.³³²

Once Canada's mission in Afghanistan ends, the CF, particularly the Army, may face a severe QoE challenge. While CF leaders have identified the Arctic as a future strategic focus,³³³ soldiers tested in the crucible of combat may not find Arctic-sovereignty operations particularly satisfying.³³⁴

CF leaders must conduct difficult, challenging training; enable junior leaders to make decisions; and be pragmatic and forward-thinking in their approach. They must support the CF as an institution, rather than focusing on manning pressures in disparate occupations, and work to encourage and maintain CF QoE, even in the face of future fiscal challenges.³³⁵ As the commander of Canada's Army has stated, "training to excite young soldiers" will be a necessity in the post-Afghanistan CF.³³⁶

Institutional connection

Institutional connection refers to the perception of the CF as a unified team, where senior leaders can identify with and credibly guide their subordinates by virtue of shared understanding, credibility, and mutual respect. "The sense of connectivity with an organization and what future it holds for the individual is key."³³⁷ Institutional connection also encompasses the corporate elements of Canada's government acknowledging that CF service is unique and demanding; as a former Chief of the Defence Staff noted, "we are not the Public Service of Canada; we are the Canadian Forces and our job is to be able to kill people."³³⁸ CF personnel serve with unlimited liability and collectively hold unique skill sets not found in other institutions. However, CF personnel, like any other workers, need to feel that their organization values their skills; a series of civilian employee retention studies found that "organizational prestige shaped the [employee's] decision to stay."³³⁹ Institutional connection, then, is one area that the CF should consider with a view to retaining strong CF personnel:

Soldiers are our credentials. We must support them with a culture that allows honest mistakes, encourages initiative and values integrity. ... [O]ur values and assumptions must be communicated in our actions as leaders.³⁴⁰

The *Canada First* Defence Strategy provides an example of a divide between civilian and military leaders as well as between political and strategic leaders and the CF that does their bidding. For instance, the graphic accompanying a paragraph in *Canada First* Defence Strategy describing land combat vehicles and systems modernization is a picture of a US Army multiple-launch rocket system (MLRS), a system Canada does not use.³⁴¹ Another picture shows a light support vehicle wheeled (LSVW), a vehicle universally reviled by soldiers that performs dismally in field settings.³⁴² To many seasoned CF members, the LSVW epitomizes what has been popularly termed the 1990s "decade of darkness," a CF plagued by rock-bottom morale, leadership mistrust, a lack of institutional confidence, budget cuts that gutted readiness, and general malaise.³⁴³ That the CF's capstone guiding document uses imagery of capabilities the CF cannot afford, and imagery representing the CF's darkest days in recent memory to support views on modernization, is a sign of disconnect:

The best bosses work doggedly to stay in tune with this relentless attention [of subordinates towards their superiors] and use it to their advantage. ... [T]hey know that the success of their people and organizations depends on maintaining an accurate view of how others construe their moods and moves ...³⁴⁴

While bureaucracy is a necessity in any large organization, this shortfall is indicative of a bureaucratic system out of touch with the psyche of the greater organization.

Another aspect where CF institutional connection falls short is sr NCO pay. CF pay is benchmarked to the Public Service of Canada.³⁴⁵ However, the CF sr NCO role has no corresponding or appropriate

public service or civilian employment equivalent. Sr NCOs start their service as junior workers, yet transition to a “working manager” role, where they literally are the backbone of the CF. Officers identify what tasks need to be completed, while sr NCOs generally identify how to accomplish them. They do this while concurrently advising their officers (by virtue of background, experience, and job knowledge) on how best to lead the CF as an institution. Sr NCOs and officers form an extremely strong, battle-tested command team. However, sr NCO pay does not reflect the additional responsibilities and leadership expectations that the institutional CF demands from its sr NCOs.

A UK study found that in some cases, NCO promotion was actually a dissatisfier, given the increased social, work, and other responsibilities that sr NCOs had above their junior non-commissioned officer counterparts. Without a concomitant and measurable increase in pay, the “wage is poor when you consider the long hours and risk of the job.”³⁴⁶ While there is no correlation in the civilian world, there is a significant difference in responsibility between a master corporal (MCpl) and a Sgt, yet their pay differential, as outlined in Table 5, is very slight.

Gross	MCpl	Pre-Tax	59,076.00	\$2,628.00	
	Sgt	Pre-Tax	61,704.00		
Province	Rank	Average Tax Rate	Tax Payable	After Tax Income	Difference
Ontario	MCpl	21.14%	12,488.69	46,587.31	\$1,809.37
	Sgt	21.57%	13,307.32	48,396.68	
Quebec	MCpl	26.97%	15,933.24	43,142.76	\$1,619.64
	Sgt	27.46%	16,941.60	44,762.40	
Nova Scotia	MCpl	25.51%	15,070.79	44,005.21	\$1,613.15
	Sgt	26.07%	16,085.64	45,618.36	
British Columbia	MCpl	20.14%	11,895.17	47,180.83	\$1,847.48
	Sgt	20.54%	12,675.69	49,028.31	

Table 5. Pre and post-tax pay differences, MCpl to Sgt basic pay³⁴⁷

In Canada’s Air Force, NCOs are crucial to keeping aircraft flying; the majority of NCO tasks involve maintenance and ground preparation. Any mistakes they make could cost aircrews their lives, endanger personnel on the ground, cause mission failure, and destroy millions of dollars’ worth of equipment:

At the end of the day the Sgt is asked to do more [than a MCpl] ... [I]t is not uncommon for Sgts to be responsible for up to 25 personnel ... [Aerospace engineer officers] would often turn to the Sgt to discuss significant engineering issues (severe corrosion, out of the norm cracks, and other flight safety issues). This requires that the Sgt understand the aircraft and its systems and be able to explain ... the nature of the problem, the implications of the problem and what action(s) have been taken to address them. The bottom line is that the Sgts have a lot to look after when they are employed in these positions ... The primary airworthiness function they [Sgts] can be authorized to hold is called Level C (Weapon System Release). Once in possession of this authorization Sgts can

release aircraft for flight. With their signature, they are attesting to the work that was conducted by their personnel (work done by Aviation techs, Avionics techs, Structures techs) was done IAW [in accordance with] the approved maintenance program for the fleet. They are attesting that the people who were employed to fix the aircraft ... held the right qualifications and authorizations and that they did the work IAW the technical manuals and installed airworthy parts, using approved tools (correctly calibrated torque wrenches as an example). This is not a trivial task and the authorization is only granted after the member has completed the required courses, has spent a certain amount of time with the fleet, and has been tested to ensure they understand all of the airworthiness implications.³⁴⁸

Infantry MCpls often serve as second in command of a section, supervising two C9 light machine gunners and supporting their section commanders. Meanwhile, Sgts who are section commanders are responsible for between 8 and 15 soldiers; their training, readiness, morale, and effectiveness; plus an armoured vehicle with the ability to apply lethal fire at targets up to 2000 metres distant, day or night.³⁴⁹ They must develop and execute tactical plans, lead patrols and be prepared to become the second in command of a 30- to 40-soldier platoon.

The differences in responsibility, accountability, authority, and expectation between MCpls and Sgts are, for most CF occupations, significant. Often, they are more significant than is indicated by the less-than \$2000 post-tax income increase from the MCpl to Sgt rank. This disparity can be yet another factor increasing the pool of dissatisfaction that could cause a CF member to release, particularly given that many civilian defence organizations seek sr NCOs to flesh out their ranks as exercise controllers, range patrollers, and contracted instructors. Modifying NCO pay to reflect the demands that the CF places on them as well as their unique skills and abilities as concurrent workers, supervisors, and leaders critical to the command team will better reflect the institution's appreciation for their service. This recognition and appreciation could make the difference between retaining or losing that experience, which is built only through experience and time.

“Civilianization of the CF,” embodied by disconnects between civilian and military elements of service, is a dissatisfier. A 2004 survey found that 72 per cent of CF personnel surveyed believed they were “losing their military customs and traditions.”³⁵⁰ US Army studies identify that “from officer evaluations to promotions to job assignments, all branches of the military operate more like a government bureaucracy with a unionized workforce than like a cutting-edge meritocracy.”³⁵¹

Canadian findings support this factor:

Members' comments revealed that dissatisfaction with leadership has to do with the perception that leaders act more like managers than leaders. Members repeatedly commented that leaders are so preoccupied with their career and advancement opportunities that they will not make tough and controversial decisions that would risk their chance of promotion.³⁵²

This factor connects with institutional honesty; CF personnel join the CF expecting a certain level of military bearing, leadership, customs, and traditions as well as distinct military rules and expectations. When this expectation falls short, dissatisfaction ensues; no one joins the military to be a civilian.

Canada's Department of National Defence (DND) has added civilian bureaucrats at 300 per cent the rate of uniformed personnel and currently employs 28,500 civilian personnel, a figure estimated to

increase significantly in coming years.³⁵³ An overwhelming increase in civilian staff, where in the past five years “personnel outsourcing costs have risen 79 per cent,” stands at odds with the public picture of a CF strapped for personnel.³⁵⁴ The CF spends “many, many dollars on consultants, contractors and professional services,”³⁵⁵ while sailors with critical skills “pier hop” from ships returning from operations to others just departing, with no respite from sustained operations. “DND office buildings filling to capacity while the army scrambled to find troops to send off to war is lousy optics,” both in the public eye and to service members.³⁵⁶ To CF personnel, the lack of deployable uniformed personnel is completely at odds with the increase in civilian staff and reflects a perceived disconnect in priorities.

Officers and NCOs employed in mixed military-civilian environments, such as National Defence Headquarters, are often dissatisfied with their civilian counterparts’ work effort and performance. Interviewees note that many civilian employees enjoy “flex time,” whereby the employee arrives at the workplace earlier than mandated every morning and in return is granted a day off every other week. From the CF members’ perspective, it seems that civilian worker hours and work schedules are sacrosanct, while any additional work, late hours, or additional responsibilities are heaped upon military personnel—a significant dissatisfier.³⁵⁷ This situation aligns with survey results identifying fairness and civilianization of the CF as dissatisfiers. CF members who may already be dissatisfied, who feel disconnected from the organization, who do not feel challenged or appreciated and are not happy with their work-life balance are experiencing a confluence of dissatisfiers all compounding each other’s effects.

CF civilianization has, in recent years, extended into overseas deployments. Deployed civilian contractors can cause “the clashing of two ‘cultures,’” the effects of which are felt in military morale and motivation.³⁵⁸ Operational civilianization can also hurt CF retention, as “contractors ... can make anywhere from two to ten times what they make in the regular military.”³⁵⁹ A US Army officer summarizes the effect of battlespace civilianization on military personnel who may already be dissatisfied: “Though money was not an issue, if I’m dissatisfied with being a staff rat anyway, I am certainly going to be more inclined to go defend my country as a mercenary (sorry, “contractor” is the buzzword now, right?) for a LOT more money.³⁶⁰ [emphasis in original] Civilianization and “over-contracting” blurs the line between military and civilian and reduces the CF’s uniqueness and institutional identity.³⁶¹ If the institution is no longer unique, if civilians perform the same functions as soldiers, but are paid considerably more, what non-monetary factors will distinguish CF service strongly enough from civilian service-for-hire to keep personnel in the CF?

Summary

Internal factors influence attrition and hamper retention. No one single overriding factor drives the release decision; different factors work together to influence a release.³⁶² Given research shortcomings identified above, CF leader input is critical to understand the interplay between institutional honesty, QoE, institutional connection and attrition. These factors are all interrelated and affect each other—a lack of institutional connection may lower a CF member’s QoE. QoE shortfalls, coupled with institutional honesty dissatisfaction, may influence a release decision. This confluence of factors means, in a practical sense, that “one-size-fits all retention packages are usually unsuccessful in persuading a diverse group of key employees to stay.”³⁶³ Money, retention bonuses, extra pay, and allowances are factors, but not the only solutions. “Organizational commitment and job satisfaction are two of the most important turnover drivers.”³⁶⁴ The CF can gain better returns and better retention by reducing dissatisfaction and preventing the confluence of these factors from driving CF personnel to release, than it can by trying to add benefits.

10. Conclusion and recommendations

*As far as taking a strategic look at retention, the US Army has learned the hard way that one aspect of being strategic is not assuming that everyone is alike. We still are using an industrial age personnel system that ignores differences.*³⁶⁵

Future CF research must:

1. Incorporate CF leader input into all future personnel studies. Given the CF's geographic dispersion and the high tempo of personnel employed in critical leadership and command positions, simply soliciting their written input will provide limited, if any, effective response. A better method would be to have a retention team member conduct interviews with key leaders, transcribe the results and then maintain them centrally. This effort must be supported by CF commanders and be recognized as a strategic necessity for continued CF personnel effectiveness.
2. Identify the "critical mass" of dissatisfying factors that, when combined and compounded, will overarch all the benefits of CF service and prompt a CF member to release. This may be impossible on a broad scale as different personnel weight dissatisfiers differently, but a potential avenue of approach would be to further define factors "by age and by [career] stage."³⁶⁶ In so doing, the CF could gain a clearer understanding of different factors' importance as CF members develop and change and potentially adjust retention efforts accordingly.
3. Identify the correlation between Canada's economy, employment rate, and CF retention, to include geographic differences based on local economic circumstances. For example, soldiers serving in Edmonton or Cold Lake have greater civilian employment opportunities, given the proximity of oil companies and Alberta's economy, than their counterparts in Gagetown, New Brunswick.
4. Develop methodology and metrics to measure QoE.
5. Examine ways of improving CF exit and retention survey response rates while still maintaining their scientific rigour and credibility.
6. Identify the correlation between OT attempts and attrition.
7. Examine CFPAS with a view to modifying it to better reflect actual CF requirements. It should include incorporating subordinate input into leader assessments without making the assessment reflective of popularity rather than leader effectiveness.

The CF *MPRS* incorporates a host of different objectives to enhance retention. However, CF leaders should consider the following as retention methods that will increase institutional honesty, increase QoE, and improve institutional connection:

1. Continue to implement the CF *MPRS* and continue to modify it to maintain its relevance. Retention should be a CF cultural and leadership imperative, not a short-term problem that, once solved, is no longer important. To consider and mitigate the changing personnel environment, the CF should consider its approaches to best use generation Y's strengths and enthusiasm to maintain a strong and capable force. The CF must ensure that all personnel:

- a. see themselves as connected to, and part of, the organization;
 - b. are given opportunities to problem-solve with their colleagues;
 - c. connect individual contributions with their own and ... [CF] goals;
 - d. feel valued, respected, and rewarded for their contributions; and
 - e. develop social and professional relationships within the organization.³⁶⁷
2. Implement retention NCOs in CF units. These positions could be filled by experienced NCOs who require a break from operational service or employment to round out their experience in preparation for senior appointments. Properly selected, they will have the personnel awareness, leadership experience, and credibility to engage with junior CF personnel to enhance retention, identify retention trends, and advise unit COs on retention issues. This initiative will demonstrate tangible CF commitment and retention mindset, while providing linkages and assessments that can be centralized, analysed, and used for future personnel planning.
 3. Examine the use of sabbaticals, LWOP or some variant of it as a retention method, as used by the UK military to provide potentially burned-out service personnel with a much-needed break for minimal cost. While fully-paid sabbaticals are not practical, a potential middle ground, perhaps an extended period of leave on partial pay, could be used as a reward or retention method for deserving CF personnel.
 4. Implement updated CFPAS criteria to include different assessment criteria for CF personnel by rank and employment. One potential way ahead could be different assessment criteria for command/leadership and staff positions to reflect differing challenges, requirements, and focus.
 5. Use OT as a retention tool. Viewing OT as a CF gain, not a trade-specific loss, and offering OT as an incentive for soldiers to commit to further terms of CF service at the completion of their contracts will reduce OT-related dissatisfaction and attrition. OT must also be made administratively easier.
 6. Examine CF honours and recognition with a view to properly recognizing the efforts of key, but often unsung, CF personnel, both enlisted and officer.
 7. Modify CF drug control policy to reflect the perceived and stated “zero tolerance.” This should include granting COs more authority to take swift and decisive career action against drug users and other poorly performing members. COs or superior commanders, rather than analysts in Ottawa, should have authority to determine and order career action against poor performers and drug users to include determining release. This will not only demonstrate CF organizational trust and faith in the chain of command and its commanders, but also provide the chain of command the quick and appropriate authority and ability to enforce CF policy.
 8. Modify sr NCO pay to better reflect the institutional demands on and expectations the CF has of its sr NCOs. This will make pay more equitable but also recognize, in a tangible way, the worth and value of the sr NCO to the CF as an institution.

Rather than looking to add benefits or motivators to the CF personnel retention environment, CF leaders must look at making existing processes, policies, and procedures better to reduce dissatisfaction. The issue is not that the CF needs to give personnel more pay, benefits, or amenities. Rather, it must do less of the things that—when combined and compounded—frustrate, dissatisfy, and dishearten its personnel.

Today's CF is institutionally competent, confident, and capable. Well-educated, experienced, and credible, it has, despite its small size, exceptional professionalism and capability. Retaining this force as well as capturing and perpetuating the best of its knowledge, skills, and abilities will be a challenge, particularly in the face of future fiscal restraints. The future force will need every bit of today's skill; the future security environment will be chaotic, complicated, technologically accelerated, uncertain, and lethal. As recent history shows, revolution, conflict, regime change, and instability can happen very quickly; their effects, fuelled by digital communications, can easily spill over to affect states and non-state actors across the globe.

The future personnel environment will be challenging. The CF relies on institutional knowledge and human capital development, developing its leaders from within. Military service's inherent challenges, responsibilities, and liabilities preclude lateral entry from competing industry. Unfortunately, the future personnel environment is dominated by an upcoming working generation focused on short-term employment and gathering experience, not dedicating to a long-term, single-service career. This philosophy is diametrically opposed to the requirement to build leaders and critical staff skills from within. In such an environment, personnel retention and motivation will grow in importance; "even when voluntary turnover rates drop because of unfavourable labor markets, it would be shortsighted to ignore retention management."³⁶⁸

Attrition carries significant costs, both financially and in terms of experience and effectiveness. It is far easier and more cost-effective to recoup the investment in recruiting and training by retaining existing personnel than by relying on recruiting to build and, when needed, expand the force. Given that high performers are often prone to boredom and dissatisfaction, attrition/retention activities must be continuous, even in times of manning stasis or reduction. As economic situations change, the CF may once again find itself hemorrhaging personnel and the breadth of knowledge and experience they hold. The CF *MPRS* offers a comprehensive framework and achievable objectives to make CF retention a success.

CF personnel attrition and retention research is comprehensive and ongoing, yet does not take advantage of a critical source of information, analysis and knowledge—its own leaders. Science and academic rigour are the cornerstones of the CF's knowledge base; balancing scientific methodology with the personnel knowledge, identification of trends as well as an ability to bring context and assessment that the CF's leaders have will create a winning, strategically relevant, and realistic body of personnel knowledge.

No one single factor causes CF attrition, nor can attrition be mitigated through financial means alone. Retention bonuses are a tool that has limited effectiveness, particularly since the heart of retention challenges are dissatisfiers internal to the CF. Adding benefits will not resolve the dissatisfaction they bring; however, removing and resolving dissatisfying factors as well as modifying policies to reduce personnel and administrative friction will. CF leaders need to consider QoE, not only quality of life. They must consider and work towards sustaining institutional honesty in policy application, not just policy creation. Finally, they must work to maintain and demonstrate institutional connection between national leadership and the very personnel that do their bidding, without fail, in dangerous and uncertain places.

Retention and its related activities must remain in the CF leadership psyche and be an ongoing, constant, evolutionary process. Even though the CF is not presently in a retention crisis, inculcating retention as a critical CF personnel factor will work to prevent retention crises from recurring in the future. Retention will always be critical to a healthy force.

Abbreviations

%	per cent
£	pound sterling
ABCA	America, Britain, Canada, Australia
ADF	Australian Defence Force
Can	Canadian
CANFORGEN	Canadian Forces General message
CEO	chief executive officer
CF	Canadian Forces
CFAO	Canadian Forces Administrative Orders
CFB	Canadian Forces Base
CFJP	Canadian Forces Joint Publication
CFPAS	Canadian Forces Personnel Appraisal System
CMM	Commander of the Order of Military Merit
CMP	Chief Military Personnel
CO	commanding officer
DAOD	Defence Administrative Orders and Directives
DAS	Defence Attitude Survey
DEO	direct entry officer
DMCA	Director Military Careers Administration
DND	Department of National Defence
EME	electrical mechanical engineering
FOB	forward operating base
IAW	in accordance with
IDF	Israeli Defence Force
KAF	Kandahar Airfield
LSVW	light support vehicle wheeled
LWOP	leave without pay

MILPERSCOM	Military Personnel Command
MLRS	multiple-launch rocket system
MMM	Member of the Order of Military Merit
MO	medical officer
MP	military police
<i>MPRS</i>	<i>Military Personnel Retention Strategy</i>
NATO	North Atlantic Treaty Organization
NCM	non-commissioned member
NCO	non-commissioned officer
OL	official languages
OPSTEMPO	operations tempo
OMM	Officer of the Order of Military Merit
ORMM	Order of Military Merit
OT	occupation transfer
PAT	personnel awaiting training
PMR	Personnel Management Report
QoE	quality of employment
QR&O	Queen's Regulations and Orders for the Canadian Forces
RMA	Revolution in Military Affairs
SDSR	Strategic Defence and Security Review
SLT	second language test
SOLET	Second Official Language Education and Training
sr NCO	senior non-commissioned officer
TES	trained effective strength
UN	United Nations
UK	United Kingdom
US	United States

Notes

1. Canada, Department of National Defence (DND), *Army Public Affairs AT Poster 2* (Ottawa: Canadian Army, 2010).

2. Canada, DND, *The Canadian Forces Retention Survey - 2010* (Ottawa: Chief Military Personnel), 1-16; and Chief Military Personnel, *Military Personnel Retention Strategy* (Ottawa: DND, 2009), 1-10. The six lines of operations are: Personnel Tempo, Career/Family Balance, Career/Employment Management, Basic Training, Recruiting/Selection, and Leadership. CF retention efforts aim to reduce

attrition not attributable to training failures, unsatisfactory medical fitness, conduct or performance deficiencies, or compulsory retirement age. Throughout this paper, the terms “attrition,” “departure,” “left service,” and “turnover” are used interchangeably. Nancy Otis and Michelle Straver, *Review of Attrition and Retention Research for the Canadian Forces* (Ottawa: Defence Research and Development Canada – Centre for Operational Research and Analysis, 2008), accessed July 28, 2014, <http://pubs.drdc.gc.ca/PDFS/unc78/p530400.pdf>, uses the same methodology, which has been selected for this study in order to ensure best clarity and focus primarily on the issue of personnel leaving the CF voluntarily. They all refer to what the CF calls “voluntary attrition,” whereby personnel that could otherwise continue to serve leave the CF voluntarily. Personnel released from CF service for medical, disciplinary, conduct, or administrative reasons or due to reaching compulsory retirement age will not be examined. Some CF statistics focus on and count all releases in the attrition rate. When not specified, this paper employs the same rule of thumb as the CF *MPRS* and considers that two thirds of all attrition is voluntary and therefore preventable. Chief Military Personnel identifies this ratio in paragraph 3 of Chief Military Personnel, *Military Personnel Retention Strategy*, 2.

3. This paper is concerned exclusively with members of the Regular Force, defined by the National Defence Act (1985), accessed July 28, 2014, <http://laws.justice.gc.ca/eng/N-5/index.html>, as “officers and non-commissioned members who are enrolled for continuing, full-time military service.” While the Reserve Force is a vital CF element, Reserve retention and manning issues are beyond the purview of this work. As such, all references to the CF or CF personnel refer to the Regular Force, unless otherwise specified. The statistical personnel report used most widely by strategic planners is the CF Personnel Management Report (PMR), a quarterly report that captures CF regular force recruiting, attrition, personnel sustainment, personnel awaiting training figures and overall strength and presents critical personnel trends and facts. The CF PMR most recent to the time of writing is the fiscal year 2010–2011 second quarter report, dated September 2010, used throughout this paper as a baseline for CF strength figures unless otherwise noted.

4. Most CF leaders are officers and senior non-commissioned officers (sr NCOs). CF officer ranks are second lieutenant, lieutenant, captain, major, lieutenant-colonel, colonel, brigadier-general, major-general, lieutenant-general, and general. CF sr NCO ranks are sergeant, warrant officer, master warrant officer and chief warrant officer. Junior NCO ranks are private, corporal and master-corporal. While junior NCOs often fulfil low-level leadership functions, they are rarely in a position to provide an organizational perspective by virtue of their limited experience and tactically focused employment, compared with their sr NCO counterparts. The Canadian Navy uses naval-specific ranks such as master seaman for master-corporal, but in the interests of brevity and clarity, this paper will use only generic CF ranks and not their naval equivalents. Finally, while the generic term “non-commissioned member” or “NCM” is used in some CF publications and communications, the author will use “non-commissioned officer (NCO)” for clarity throughout this paper.

5. These changes may be felt most strongly as Canada’s commitment to Afghanistan ends and new defence priorities in the post-Afghanistan Canadian defence and security sphere, such as the Arctic, emerge.

6. Canada, DND, B-GL-005-100/FP-001, Canadian Forces Joint Publication 1.0 (CFJP 1.0), *Military Personnel Management Doctrine* (Ottawa: Chief Military Personnel, Director General Military Personnel, 2008), 1-3.

7. Canada, DND, *Canada First Defence Strategy* (Ottawa: DND, 2008), 3.

8. The Production, Attrition, Recruiting, Retention Analysis (PARRA) Report, available on the CF’s internal Defence Wide Area Network (DWAN), is updated frequently, while the Director Human Resources Information Management, a directorate within Military Personnel Command, can produce a range of statistical reports dealing with nearly every aspect of CF personnel.

9. Matt Gurney, “DND’s Army of Bureaucrats Increases Faster than Troops,” *National Post*, January 6, 2011, accessed July 28, 2014, <http://fullcomment.nationalpost.com/2011/01/06/matt-gurney-dnds-army.htm>.

10. Canada, DND, *Canadian Forces Personnel Management Report – FY2010/2011 Second Quarter* (Ottawa: Chief Military Personnel, 2010).

11. Canada, DND, “DND/CF | Backgrounder | Recruiting and Retention in the Canadian Forces – BG 10.008 – May 4, 2010,” accessed January 24, 2011, <http://www.forces.gc.ca/site/news-nouvelles/news-nouvelles-eng.asp?cat=00&id=3359> (site discontinued).

12. Canada, DND, *Departmental Performance Report 2009–10: Part III – Estimates* (Ottawa: Government of Canada, Treasury Board Secretariat, 2010), 24, accessed July 28, 2014, http://publications.gc.ca/collections/collection_2010/sct-tbs/BT31-4-50-2010-eng.pdf.

13. Canada, Standing Committee on National Defence, *Recruitment and Retention in the Canadian Forces – NDDN [40-3]* (Ottawa: Speaker of the House of Commons, Canada, 2010).

14. Canada, DND, *Departmental Performance Report 2009–10: Part III – Estimates* (Ottawa: Government of Canada, Treasury Board Secretariat, 2010), accessed July 17, 2014, http://publications.gc.ca/collections/collection_2010/sct-tbs/BT31-4-50-2010-eng.pdf.

15. Foreign Affairs and International Trade Canada, “Canada’s Approach in Afghanistan,” accessed July 28, 2014, <http://www.afghanistan.gc.ca/canada-afghanistan/approach-approche/index.aspx>.

16. Canada, DND, “International Operations | Canadian Expeditionary Force Command,” Canadian Expeditionary Force Command, accessed February 15, 2011, <http://www.comfec-cefcom.forces.gc.ca/pa-ap/ops/index-eng.asp> (site discontinued).

17. Canada, DND, *Canada First Defence Strategy*, 15.

18. Canada, DND, *Departmental Performance Report 2009–10: Part III – Estimates*, 34, 37.

19. Ibid.; and Government of Canada, “Canada’s Games | 3. “Whole of Government” Approach: The Framework for Federal Coordination,” Canada 2010, accessed July 28, 2014, <http://www.canada2010.gc.ca/fin-rep2010/104-eng.cfm>.

20. Canada, DND, Chief of the Defence Staff, *CDS SITREP 02-11*, 1.

21. Lieutenant-Commander Ian Anderson, “Where the Willingness is Great...”: Leadership Lessons Aboard the HMCS *Charlottetown* – Operation Apollo,” in *In Harm’s Way: On the Front Lines of Leadership: Sub-Unit Command on Operations*, ed. Colonel Bernd Horn (Kingston: Canadian Defence Academy Press, 2006), 155–65, accessed July 28, 2014 http://publications.gc.ca/collections/collection_2012/dn-nd/D4-4-1-2006-eng.pdf.

22. “Top General Reverses Navy Decision to Mothball Ships – CTV News,” CTV News Calgary, accessed July 28, 2014, <http://calgary.ctv.ca/servlet/an/local/CTVNews/20100514/naval-cuts-100514/20100514/?hub=CalgaryHome>. This news item identifies that in 2010 the Navy was short more than 1400 personnel and millions of dollars to operate its vessels. As of September 2010, Canada’s Navy was short 664 personnel in “distressed occupations” that are chronically short of trained personnel, as indicated in Karol Wenek, *Reg F Recruiting and Retention: Putting the Brakes on Success* (Ottawa: Director General Military Personnel, 2010).

23. Naval officer interviews, Maritime Surface/Sub-Surface operations (MARS) and Maritime Engineers (MARE), January 2011.

24. Major Kevin Caldwell, “The Keys to Mission Success: ‘C’ Coy in Afghanistan,” in Horn, *In Harm’s Way*, 148.

25. Major Tom Mykytiuk, “Company Command in the Three Block War: November Company – Task Force Kabul, Rotation 0, Operation Athena,” in Horn, *In Harm’s Way*, 133. Mykytiuk also writes (129–42) how in Camp Julien in Kabul in 2003, senior leaders questioned why soldiers were wearing physical training (PT) clothing at 10 a.m. rather than proper uniform. He had to explain that the soldiers had been on patrol until 3 a.m. and were going back out again that evening at 8 p.m.

While 10 a.m. was during “working hours” for office workers, it was the time for these soldiers’ to rest, exercise, and prepare for further operations. The author has experienced similar situations during two deployments to Afghanistan as part of combat arms subunits. In fall 2009, some of his soldiers, having spent more than a month on sustained operations in remote forward areas, to include lethal combat with insurgents, returned to Kandahar Airfield (KAF) to acquire supplies. Shortly after dismounting from their vehicles, they attempted to purchase coffee at the KAF Tim Horton’s kiosk, where they were stopped, questioned, and counseled by KAF-based sr NCOs concerned about their disheveled appearance, dusty weapons, and overgrown hair. This event was detrimental to morale.

26. Leonard Wong and Stephen Gerras, *CU@the FOB: How the Forward Operating Base is Changing the Life of Combat Soldiers* (Carlisle, Pennsylvania: US Army War College, Strategic Studies Institute, 2006), 36, offers an excellent study about how forward operating bases (FOBs) have changed the nature of conflict and its effect on soldiers. While most of the study’s anecdotal and other evidence comes from Iraq, the FOB concept is also present in Afghanistan. For instance, US FOB RAMROD, in western Kandahar Province, is a large camp built in the barren desert of Maiwand district, which, despite its desolate and isolated setting, features a large, air-conditioned post exchange (PX [store]) staffed with civilian cashiers and staff. The dichotomy becomes even more evident when, at night, American-style meals, complete with televised football games in the dining facilities, are accompanied by the sound of mortar positions in the camp firing in response to requests for support from patrols in the camp’s vicinity.

27. Canada, DND, *Departmental Performance Report 2009–10: Part III – Estimates*, 35.

28. There are certain military occupations considered part of the CF rather than specific to a single service. For example, medical personnel, although they may wear an Army, Navy, or Air Force uniform, are part of the CF medical establishment. Occupations such as this are often referred to as “purple”; in essence denoting that, regardless of the colour of their uniform, they may be called to serve throughout the CF.

29. The “purple trade” deployment potential is not limited only to Air Force personnel—Army- and Navy-uniformed purple personnel have the same opportunities. For example, the author commanded an army combat team in Afghanistan in 2009–2010. Of the five medical technicians attached to the combat team, one wore a Navy uniform, while two others were Air Force personnel and had been tasked, while serving at Air Force bases, to deploy to Afghanistan. Only two wore Army uniforms and technically belonged to the Land element.

30. In Canada, DND, *Departmental Performance Report 2009–10: Part III – Estimates*, iii, Minister of National Defence Peter MacKay identifies that none of the “activities [accomplished by the DND in fiscal year 2009–2010] would be possible without investment in Defence’s most important resource: its people.”

31. Canada, DND, B-GL-005-100/FP-001, CFJP 1.0, *Military Personnel Management Doctrine*, 3-1, 4-1. Other forces such as the US and UK have disparate, service-based personnel systems.

32. Canada, DND, “About Chief Military Personnel.” Military Personnel Command, accessed February 10, 2011, <http://www.cmp-cpm.forces.gc.ca/acm-scp/org/sf-cs/index-eng.asp> (site discontinued).

33. The officer responsible for Canadian Forces Personnel Management is the Chief Military Personnel (CMP), normally a major-general/rear-admiral, who is also the commander of Military Personnel Command (MILPERSCOM). MILPERSCOM is a force-generating organization of the CF and is responsible for managing the CF Personnel system, including policy and program development. Concurrently, along with the Navy, Army and Air Force, MILPERSCOM’s personnel, many from the Canadian Forces Health Services Group, deploy for operations. Other CMP/MILPERSCOM responsibilities include conducting recruit training at the Canadian Forces Leadership and Recruit School in CFB St-Jean and support training at the Canadian Forces Support Training Group at CFB Borden. Often, CMP and MILPERSCOM are used interchangeably, so the term “CMP” is used both to describe the person (the actual Chief Military Personnel) and MILPERSCOM as an organization, as in “the Canadian Defence Academy is part of CMP.” Canada, DND, “About Chief Military Personnel,” Military Personnel Command, accessed February 10, 2011, <http://www.cmp-cpm.forces.gc.ca/acm-scp/org/sf-cs/index-eng.asp> (site discontinued).

34. Canada, DND, B-GL-005-100/FP-001, CFJP 1.0, *Military Personnel Management Doctrine*, 3-1, 3-2.
35. Canada, DND, “About DGCB,” Director General Compensation and Benefits, Chief Military Personnel, accessed February 14, 2011, <http://www.cmp-cpm.forces.gc.ca/dgcb-dgras/adg-sdg/index-eng.asp> (site discontinued).
36. Statistics Canada, “Average Earnings of the Population 15 Years and Over by Highest Level of Schooling, by Province and Territory (2006 Census),” accessed July 28, 2014, <http://www40.statcan.gc.ca/l01/cst01/labor50a-eng.htm>.
37. Table B to Section 2 of Canada, DND, “CBI Chapter 204 - Pay of Officers and Non-Commissioned Members,” Director-General Compensation and Benefits, Chief Military Personnel, July 28, 2014, http://cmp-cpm.forces.mil.ca/dgcb/cbi/engraph/cbi_chapter-204_e.asp?sidesection=6.
38. The majority of these services are provided by the Canadian Forces Personnel Support Agency, accessed July 28, 2014, <http://www.cfpsa.com>.
39. Canada, DND, A-PP-005-LVE/AG-001, *Canadian Forces Leave Policy Manual* (Ottawa: Director-General Compensation and Benefits, Chief Military Personnel, 2009), 24, accessed January 5, 2011, <http://www.cmp-cpm.forces.gc.ca/dgcb-dgras/pub/cbi-dra/205-eng.asp> (site discontinued).
40. Canadian Forces Base Esquimalt health promotion director Maryse Neilson, quoted in Katie Derosa, “CFB Esquimalt Says Its Members Are Fit Despite Findings of Fat Trend,” *The Victoria Times-Colonist*, February 13, 2011, accessed February 13, 2011, <http://www.nationalpost.com/opinion/uniform+street/4060462/story.html> (site discontinued).
41. Cathy Gulli and Kate Lunau, “Adding Fuel to the Doctor Crisis,” *Macleans*, January 2, 2008, accessed July 28, 2014, <http://www.macleans.ca/society/health/adding-fuel-to-the-doctor-crisis/>.
42. A December 2010 Ipsos-Reid survey of 1043 Canadians 18 years and older found that 81 per cent of Canadians are “proud of the men and women who serve in our armed forces.” Darrell Bricker and John Wright, *Chief of the Land Staff Presentation* (Ipsos Public Affairs Worldwide, 2011), 32, 34.
43. Chief Military Personnel, *Military Personnel Retention Strategy*, 2.
44. Canada, Standing Committee on Public Accounts, *Eleventh Report, Chapter 2, National Defence – Military Recruiting and Retention of the May 2006 Report of the Auditor General of Canada* (Ottawa: Speaker of the House of Commons, Canada, 2006), accessed July 28, 2014, http://cmte.parl.gc.ca/Content/HOC/committee/391/pacp/reports/rp2560007/391_PACP_Rpt11/391_PACP_Rpt11_Pg01-e.html.
45. Auditor General of Canada, *2006 May Status Report of the Auditor General of Canada* (Ottawa: Government of Canada, [2006]), accessed July 28, 2014, <http://www.oag-bvg.gc.ca/internet/docs/20060502ce.pdf>.
46. Commodore L. M. Hickey, “Remarks from DGMPPR,” *Matelot* (Summer 2008): 5, accessed July 28, 2014, http://hrcna.com/files/Matelot_Summer2008_E.pdf.
47. Canada, DND, *Annual Report on Regular Force Attrition 2007/2008* (Ottawa: Attrition and Retention Team, Director General Military Personnel Research and Analysis, 2009) shows that the 20-years-of-service point is a historical spike in attrition for both officers and non-commissioned members; between 20 and 25 per cent of personnel leave at this point.
48. Chief of the Defence Staff, *CDS SITREP 02-11*, 15.
49. Wenek, *Reg F Recruiting and Retention*, 8.
50. Statistics Canada, “Latest Release from the Labour Force Survey. February 4, 2011,” accessed July 28, 2014, <http://www.statcan.gc.ca/subjects-sujets/labour-travail/lfs-epa/lfs-epa-eng.pdf>. (February 2011 release

no longer available at this link).

51. While Standing Committee on National Defence, *Recruitment and Retention in the Canadian Forces – NDDN (40-3)*, 1-9, asserts that CF retention programmes had a more significant effect than the economic downturn on retaining personnel in the CF, neither assertion can be definitively proven. As a result, one cannot discount the effects of the downturn and allege that CF retention strategies were a definitive success.

52. Chuck Crumbo, “In the Military: Retention Might be Tied to Economy’s Health,” *McClatchy - Tribune Business News* (Dec 28, 2008).

53. The economic downturn has positively influenced US military retention, despite high-dollar signing bonuses and other incentives being reduced from past levels, as depicted in Scott Fontaine, “Army Prospers from Economic Doldrums: Re-Enlistments: Retention High as Soldiers Worry about Unemployment,” *McClatchy - Tribune Business News* (Jan 29, 2010). The four US military branches are the Army, Navy, Air Force, and Marines.

54. Michael E. O’Hanlon, “Who Will Fight for Us?” *Orbis* 53, no. 3 (Summer, 2009): 405–18.

55. “Economy Won’t Weaken in 2011,” *Canadian Business* (January 19, 2011), 25, accessed July 28, 2014, <http://www.compas.ca/data/110110-EconomicForecast-EPCB.pdf>.

56. Foreign Policy Research Institute, “Multimedia: Who Will Fight for Us? (Personnel) - FPRI ‘Defense Showstoppers’ Conference” (Philadelphia, PA: Foreign Policy Research Institute, 2009).

57. Thomas Hartley, Vice President of GfK Customer Loyalty and Employee Engagement, quoted in “More Employees Consider Changing Jobs as Economic Optimism Grows,” *PR Newswire* (September 8, 2010).

58. “Companies Still Concerned about Retention, Especially Among Top Performers,” *Report on Salary Surveys* 9, no. 12 (December 2009): 1-6, accessed July 28, 2014, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=45438285&site=bsi-live>.

59. “Employee Retention Issues Emerge,” *T + D* 64, no. 9 (September 2010): 23.

60. “Job Satisfaction Lowest Level in 22 Years,” *HR Leader - Leading People and Organisations*, accessed January 25, 2011, <http://www.humanresourcesmagazine.com.au/articles/11/0C066F11.asp?Type=59&Category=917> (site discontinued).

61. Brian Anthony Hernandez, “84% of Workers Want to Quit Jobs, Find New Gigs in 2011,” *Business News Daily*, December 28, 2010, accessed July 28, 2014, <http://www.businessnewsdaily.com/84-percent-employees-seek-new-jobs-2011-0858/>.

62. Standing Committee on National Defence, *Recruitment and Retention in the Canadian Forces – NDDN (40-3)*, 2.

63. E. Lush, “The Workplace Diva Has Arrived,” *Spectator Business*, no. 1 (May, 2008): 2.

64. “Leadership: The Boss Is an Idiot and Is Getting Us Killed,” *Strategy Page*, accessed July 28, 2014, <http://www.strategypage.com/htm/htlead/20091223.aspx>. The article identifies the organizational dangers of poor leadership, particularly the dangers of not replacing overly cautious, hidebound leaders at the battalion and brigade level. It is well known in both military and civilian circles that people uncertain of themselves tend to be overly cautious and fall back on doctrine, rules, and procedures vice being innovative and confident enough to be aggressive. Pushing overly young, inexperienced leaders too high too quickly could have long-term consequences.

65. Abridged version of remarks first made by US President John F. Kennedy, speaking at the United States Military Academy at West Point on June 6, 1962, quoted by Robert M. Gates, *United States Secretary of Defense Speech: United States Military Academy, February 25, 2011* (West Point, NY: US Department of Defense, 2011).

66. Daniel M. Smith, "The World at War," *Defense Monitor* 39, no. 1 (January 2010): 5, accessed July 28, 2014, <http://search.ebscohost.com/login.aspx?direct=true&db=mth&AN=49115757&site=ehost-live>.
67. Canada, DND, *The Future Security Environment 2008–2030 Part 1: Current and Emerging Trends* (Winnipeg: 17 Wing Publishing Office for the Chief of Force Development, 2009), 103.
68. Prime Minister Stephen Harper, *Speech to the Economic Club of New York*, September 20, 2006, 7-8.
69. Prime Minister Stephen Harper, "PM Unveils Revised Motion on the Future of Canada's Mission in Afghanistan," Prime Minister of Canada website, accessed July 28, 2014, <http://pm.gc.ca/eng/media.asp?category=2&pageId=46&id=1995>.
70. Barry Cooper, *Democracies and Small Wars* (Calgary: Canadian Defence and Foreign Affairs Institute, 2009), 4-11, further defines these terms, which are variations on the theme of opponents attacking a force's weaknesses, using failed or failing states as refuge, a dispersed battlespace, and enemies using information technology to synchronize attacks. He further describes that military forces, terrorists, insurgents, and criminals will form a nexus of opposition in future conflicts. The conflict world of the future will be dangerous and ambiguous, where nothing is simple or linear and every problem will be complex and multi-dimensional.
71. Colin S. Gray, "Irregular Warfare: One Nature, Many Characters," *Strategic Studies Quarterly* 1, no. 2 (Winter, 2007): 35–57; and Sebastien L. V. Gorka, "The Age of Irregular Warfare: So What?" *Joint Forces Quarterly* 3, no. 58 (July 2010): 32–38.
72. Group Captain Ian MacFarling, "Asymmetric Warfare: Myth or Reality?" in *Future Armies, Future Challenges: Land Warfare in the Information Age*, ed. Michael Evans, Russell Parkin, and Alan Ryan (Crows Nest, New South Wales, Australia: Allen & Unwin, 2004), 139–43.
73. T. C. Greenwood and T. X. Hammes, "War Planning for Wicked Problems," *Armed Forces Journal* 147, no. 5 (December, 2009): 18–37, accessed December 6, 2010, <http://search.ebscohost.com/login.aspx?direct=true&db=mth&AN=47758514&site=ehost-live> (site discontinued).
74. Canada, DND, *Land Operations 2021 - Adaptive Dispersed Operations: The Force Employment Concept for Canada's Army of Tomorrow* (Kingston, Ontario: Army Publishing Office, 2007), 35.
75. F. G. Hoffman, "Hybrid Threats: Neither Omnipotent nor Unbeatable," *Orbis* (Summer, 2010): 441–55. Military analyst and political scientist Dr. Steven Metz also identifies that insurgencies tend to evolve into criminal organizations during the course of a conflict, in Steven Metz, *Rethinking Insurgency*, (Carlisle, PA: US Army War College, Strategic Studies Institute, June 2007), 51–52.
76. Canada, DND, *Land Operations 2021*, 7.
77. Nass al-Risala al-Maftuha allati wajahaha Hizballah ila-l-Mustad'afin fi Lubnan wa-l-Alam [An open letter: The Hizballah programme] (Beirut, Lebanon: Hizballah, 1985), 1-6, identifies Hezbollah's political program and goals. The author was a United Nations Military Observer in South Lebanon from May to November 2002 and witnessed Hezbollah conduct operations across this spectrum during his tenure there.
78. Exum, "Hizballah at War: A Military Assessment," *Policy Focus* 63 (The Washington Institute for Near East Policy, 2006): 11.
79. Hoffman, "Hybrid Threats," 446.
80. Stephen Biddle and Jeffrey A. Friedman, *The 2006 Lebanon Campaign and the Future of Warfare: Implications for Army and Defense Policy* (Carlisle, PA: US Army War College, Strategic Studies Institute, 2008), 31, 42, 51–53, 73.
81. Lieutenant-General Charles C. Krulak, "The Strategic Corporal: Leadership in the Three Block War," *Marines Magazine* (January, 1999), accessed September 15, 2010, http://www.donhcs.com/hsr/21_march/doc/Krulak%20C.%20Strategic%20Corporat%20&%203%20block%20war.pdf (site

discontinued). For an excellent description and chronology of this concept's use by the Canadian Forces, see also Dr. A. Walter Dorn and Michael Varey, "The Rise and Demise of the 'Three Block War,'" *Canadian Military Journal* 10, no. 1 (2009): 38–45, accessed July 28, 2014, <http://www.journal.forces.gc.ca/vol10/no1/doc/07-dornvarey-eng.pdf>.

82. Krulak, "The Strategic Corporal." It is interesting to note that Krulak developed the concept prior to the rise of Internet-based social media networks and the technological advances in mobile communications that make it possible to record video and upload it to the global audience via sites such as Facebook and YouTube.

83. "You Have to Lead from Everywhere," *Harvard Business Review* 88, no. 11 (November 2010): 78, accessed July 28, 2014, <http://web.a.ebscohost.com/ehost/detail?sid=991848c5-95b8-4918-b80c-2be01ed1b671%40sessionmgr4004&vid=3&hid=4201&bdata=JnNpdGU9ZWhvc3QtG12ZQ%3d%3d#db=bth&AN=54604569>. Admiral Allen attributes this scrutiny to "social media and the 24 hour news cycle."

84. "US Tank Crushes Iraqi Civilian's Car 1," YouTube video, (YouTube, 2006), 1:22, posted on November 26, 2006, accessed July 28, 2014, <http://www.youtube.com/watch?v=lJC1unnuwds>.

85. A Google search for "US Tank Crushes Iraqi Civilian's Car" reveals 27,400 results.

86. From a study of leadership challenges evolving from the Afghan version of the "three block war" authored by Colonel Bernd Horn, quoted in Robert W. Walker, *The Professional Development Framework: Generating Effectiveness in Canadian Forces Leadership* CFLI TR 2006-01 (Kingston: Canadian Forces Leadership Institute, Canadian Defence Academy, 2006).

87. David Betz, "Redesigning Land Forces for Wars Amongst the People," *Contemporary Security Policy* 28, no. 2 (August 2007): 221–243, accessed July 28, 2014, <http://www.contemporarysecuritypolicy.org/assets/CSP-28-2-Betz.pdf>.

88. This incident demonstrates, in a tragic and practical way, the networked nature of the modern terrorist and his ability to influence disenfranchised youth around the world, even from remote locations, to commit acts of violence. The gunman alleged that watching a YouTube video of US soldiers operating in Afghanistan prompted the attack. Police investigators noted that the gunman "was shy and had few friends, and appeared to get his ideas not from mosque attendance or personal contact, but from the Internet." German prosecutor Rainer Griesbaum assesses that the incident shows the dangers of "virtual jihad" and "underscored the threat from Internet extremism" in "Germany: Airport Shooting Suspect's Gun Jammed," CTV News, accessed July 28, 2014, <http://www.ctv.ca/CTVNews/World/20110304/frankfurt-germany-airport-shooting-investigation-110304/>.

89. Arab proverb, quoted in Arleen Arnsperger, "4GenR8tns: Succeeding with Colleagues, Cohorts & Customers," *Generations at Work*, accessed July 28, 2014. http://www.generationsatwork.com/articles_succeeding.php.

90. Unless otherwise noted, "traditionalists" are those born between 1925 and 1945, "baby boomers" were born between 1946 and 1964, "generation X" was born between 1965 and 1980, and "generation Y" was born between 1981 and 2000. While some studies refer to this generation as "millennials," this paper will not use this term, as the author considers "generation Y" is more appropriate and offers the least chance of terminology confusion. These definitions are those used in Leesa Tanner, "Who are the Millennials?" (Ottawa: Defence Research and Development Canada - Centre for Operational Research and Analysis, 2010). An extremely comprehensive study prepared by the Canadian Navy's Operational Research Team, its definition of "millennials" is at odds with other literature. Some authors, such as generational research expert Claire Raines, in Claire Raines and Arleen Arnsperger, "Millennials at Work," *Generations at Work*, accessed July 28, 2014, http://www.generationsatwork.com/articles_millennials_at_work.php, refer to millennials as those born post-2000, but as M. McCrindle and M. Beard note in *Seriously Cool: Marketing, Communicating and Engaging with the Diverse Generations* (Baulkam Hills Business Centre, Australia: McCrindle Research, [2007]), accessed July 28, 2014, <http://robertoigarza.files.wordpress.com/2008/11/>

art-marketing-communicating-with-the-diverse-generations-mccrindle-2007.pdf, “there is no demographic or sociological justification for such choices.” Due to commonly found disparities in terminology, referring to this demographic as generation Y poses the least opportunity for confusion. Finally, “generation Z” are those born post-2000. McCrindle and Beard note that generation Z likely begins with the 1995 birth-rate pickup, while noted generational expert Tammy Erickson identifies that “1995–1997 ... will turn out to be the switch point—the cut off for Generation Y and the beginning of a new generation,” in “Welcome the Post-Gen-Y Generation,” *Harvard Business Review*, accessed July 28, 2014, http://blogs.hbr.org/erickson/2008/07/welcome_the_postgeny_generatio.html. However, given that it is still too early for the majority of research to concur on this generation’s actual start point, and “The Post-Gen-Y Generation” is cumbersome to write, “generation Z” will be used throughout this paper when required to identify those born after 2000.

91. The table is based on Alberta Learning Information Service’s “Tip Sheets: Bridging the Generation Gap at Work,” Government of Alberta, accessed July 28, 2014, <http://alis.alberta.ca/ep/eps/tips/tips.html?EK=7380>.

92. Jonathon Gatehouse, “What the Boomers Are Leaving their Children,” *Macleans*, December 1, 2010, accessed July 28, 2014, <http://www.macleans.ca/news/world/what-the-boomers-are-leaving/>.

93. Tanner, *Who are the Millennials?*, 12.

94. American Management Association, “Leading the Four Generations at Work,” AMA Worldwide, accessed July 28, 2014, <http://www.amanet.org/training/articles/Leading-the-Four-Generations-at-Work.aspx>.

95. Arnsparger, “4GenR8tns: Succeeding with Colleagues.”

96. Claire Raines, “Xers, Boomers and Other Bank Customers,” *Generations at Work*, accessed July 28, 2014, http://www.generationsatwork.com/articles_xers.php.

97. Gatehouse, “What the Boomers Are Leaving.”

98. Tanner, *Who are the Millennials?*, 12.

99. Tables C.3a and C.3b to Canada, DND, *Annual Report on Regular Force Personnel 2008/2009* (Ottawa: Workforce Modelling & Analysis Team, Director General Military Personnel Research and Analysis, 2010) contain officer and NCM age percentiles, by rank, for all CF members.

100. Leonard Wong, *Generations Apart: Xers and Boomers in the Officer Corps* (Carlisle, PA: US Army War College, Strategic Studies Institute, 2000), 14.

101. Mark Ervin, “Letter to the Editor, Re: Gen Y in the Workforce,” *Harvard Business Review* 87, no. 7 (July, 2009): 150, accessed September 10, 2010, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=41998812&site=bsi-live> (site discontinued).

102. Marshall Lager, “X Ways,” *Customer Relationship Management Magazine*, November 1, 2006, accessed July 28, 2014, <http://www.destinationcrm.com/Articles/Editorial/Magazine-Features/X-Ways-42517.aspx>.

103. Arnsparger, “4GenR8tns: Succeeding with Colleagues.”

104. Tamara J. Erickson, “10 Reasons Gen Xers are Unhappy at Work,” *Harvard Business Review*, accessed July 28, 2014, http://blogs.hbr.org/erickson/2008/05/10_reasons_gen_xers_are_unhapp.html. Douglas Coupland, *Generation X: Tales for an Accelerated Culture* (New York: St. Martin’s Griffin, 1991), 192 outlines generation X’s frustration, abandonment, and attitudes towards the baby boomers.

105. Tanner, *Who are the Millennials?*, 14.

106. There are many examples of the CF’s transformation or “transformation-like” activities from 1990 to 2010. In the 1990s, the post-Cold War search for a “peace dividend” came in the form of budget cuts and personnel downsizing, epitomized by the Force Reduction Plan explained previously. After the Somalia

scandal of the mid-1990s, the officer corps underwent a period of intellectual self-flagellation, was studied by a panel of noted Canadian academics external to the CF, and then underwent a professional transformation that saw greater emphasis on academic study for CF officers as a necessity for service and advancement. The advent of the year 2000 saw a series of “transformational thinking” initiatives under the umbrella of “Defence 2000 Transformation,” accompanied by glossy “D2000 News” brochures containing feel-good articles about “change-leading thinking” and “redesigning processes,” published by National Defence Headquarters and pushed to all levels of the CF. The content of these publications was completely divorced from the reality of the serving CF at the time, and they were viewed derisively by many generation X junior officers and enlisted personnel. Post-2000, many Army units were stripped of large numbers of their vehicles under an equipment rationalization program. Service support personnel were pulled from line units and consolidated in close support and general support service battalions, adding chain-of-command overhead but no real efficiencies in the provision of support. Medical personnel were pulled from line units and centralized in specialized medical units and “care delivery units,” where a pool of medical personnel provided care to several units’ soldiers but did not belong to any of the units they “serviced,” divorcing medical practitioners from the soldiers they cared for. The advent of high technology saw a search in military circles for a Revolution in Military Affairs (RMA), whose advocates postulated that exceedingly capable sensors and precision weapons would enable future forces to be “network-enabled, agile, flexible and lethal.” One example of such thinking can be seen in Captain Eric Dion, “The E-Fantry Warrior! The Evolution of the Queen of Battles in the Face of 21st Century Challenges,” *Canadian Army Journal* 7, no. 2 (Summer, 2004): 14–23. In practical terms, this search for RMA seemed to many a thinly veiled renaming/repackaging of further cuts and reductions of capabilities termed “legacy” and no longer relevant, such as main battle tanks, armoured combat engineers, and tube artillery. Legacy systems were to be replaced by high-technology surveillance, long-range precision missiles and ever-larger, more-computer-dependent headquarters. Lieutenant-General Rick Hillier, *Army Transformation- Press Conference Speech*, October 30, 2003; Dr. Elinor Sloan, “Strategic Analysis - Canada and the Revolution in Military Affairs,” DND, Associate Deputy Minister (Policy), accessed January 17, 2011, <http://www.forces.gc.ca/admpol/revolution> (site discontinued); and Canada, DND, *Army Force Employment Concept*, 2004, 45, identify this thinking. Throughout this same time, the Navy saw a reduction in the number of ships and personnel, while Air Force flight hours for certain airframes, notably fighters, were cut. To many generation X service members, “transformation” really means “do more with less and prepare to have tasks increase, but resources and personnel cut, with greater oversight from more and larger headquarters.” CF survey findings outlined in Otis and Straver, *Review of Attrition and Retention*, i-66, “reveal high levels of cynicism toward the transformation initiative. For example, many members felt that the current initiative was not different from past initiatives, which have had few positive effects.”

107. Alberta Learning Information Service, “Tip Sheets: Bridging the Generation Gap at Work,” Government of Alberta, Canada, accessed July 28, 2014, <http://alis.alberta.ca/ep/eps/tips/tips.html?EK=7380>.

108. Wong, *Generations Apart: Xers and Boomers*, 16. While this example is an American one, referring to the President Clinton / Monica Lewinsky scandal, Canadian generation X officers and soldiers have had their own share of “command disappointments.” Examples include the Somalia scandal and its attendant cover-up by senior CF officers, including General Jean Boyle, the then-Chief of the Defence Staff, and DND public servants, followed by the perceived scapegoating of low-ranking soldiers and the eventual disbandment of the Canadian Airborne Regiment. A host of other questionable senior officer and senior public servant activities can be found in Scott Taylor and Brian Nolan, *Tarnished Brass* (Toronto: Lester Publishing Limited, 1996). While a sensationalized account that verges on muckraking, this work was widely read by many generation X CF members in the 1990s and still remains in the CF consciousness as a series of examples of poor leadership and self-focused leaders divorced from their subordinates.

109. Tanner, *Who are the Millennials?*, 13.

110. Wong, *Generations Apart: Xers and Boomers*, 35.

111. Joanne Laucius, “X at a Crossroads,” *The Ottawa Citizen*, October 8, 2010, accessed March 9, 2011, <http://www.ottawacitizen.com/entertainment/movie-guide/Crossroads/3646042/story.html> (site discontinued). Leonard Wong, “Fashion Tips for Field Grades,” *Strategic Studies Institute Monthly Newsletter*, October 4, 2006, accessed March 3, 2011, <http://www.strategicstudiesinstitute.army.mil/>

pubs/display.cfm?pubID=281 (site discontinued), identifies and cautions against the trend for officers to narrow vice widening their focus and thinking as they rise in rank and experience.

112. Norma Ramage, “Advertising Is War,” *Marketing Magazine*, October 2, 2006, accessed July 28, 2014, <http://www.marketingmag.ca/news/marketer-news/advertising-is-war-19941>.

113. Statistics Canada, “Population by Sex and Age Group (as of July 1, 2009),” accessed January 22, 2011, <http://www40.statcan.ca/l01/cst01/demo10a-eng.htm> (2009 data no longer available at this link).

114. Tanya Ryan-Segger, “The Why Generation,” *B&T Weekly*, April 27, 2007, accessed October 10, 2010, www.proquest.umi.com (site discontinued).

115. Hao Shuo, Andrew Wan and David Tang, “Generation Why - So What?” *Pointer - Journal of the Singapore Armed Forces* 35, no. 2 (2009): 67, accessed July 28, 2014, <http://www.mindef.gov.sg/content/imindef/publications/pointer/journals/2009/v35n2/feature6.print.html?Status=1>.

116. Assistant United States Labor Secretary Jane Oates, quoted in John Maggs, “Q&A: Oates on Millennials’ Job Outlook,” *National Journal* (05/08 2010): 31.

117. Karyn McCormack, “Careers: The Goods on Generation Y,” *Bloomberg Businessweek*, June 25, 2007, 1, accessed July 28, 2014, http://www.businessweek.com/investor/content/jun2007/pi20070624_294649.htm.

118. Michael Fertik, “The Kids Are All Right: Why New Graduates Should Give You Hope,” *The Conversation* (November 19, 2010).

119. Jessica Sebor, “Y Me,” *Customer Relationship Management Magazine*, November 1, 2006, 27, accessed July 28, 2014, <http://www.destinationcrm.com/Articles/Editorial/Magazine-Features/Y-Me-42331.aspx>.

120. This characteristic is identified very well in the case study, comments, and responses found in Tamara J. Erickson et al., *Gen Y in the Workforce*, vol. 87 (Harvard Business School Publication Corp, 2009), 43–49; Ervin, *Letter to the Editor, Re: Gen Y in the Workforce*, 150; and Emily Sawyer-Kegerreis, “Letter to the Editor, Re: Gen Y in the Workforce,” *Harvard Business Review* 87, no. 7 (July, 2009), 150, accessed September 10, 2010, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=41998812&site=bsi-live> (site discontinued).

121. Stephanie Armour, “Generation Y: They’ve Arrived at Work with a New Attitude,” *USA Today*, June 11, 2005, accessed July 28, 2014, http://www.usatoday.com/money/workplace/2005-11-06-gen-y_x.htm.

122. Raines and Arnsperger, “Millennials at Work.”

123. Eric Chester, president of Generation Why Inc, a consulting organization focused on generational differences, quoted in Marshall Goldsmith, “Getting to Know Gen Why,” *Bloomberg Businessweek*, February 28, 2008, accessed July 28, 2014, http://www.businessweek.com/managing/content/feb2008/ca20080226_921853.htm.

124. Tamara J. Erickson, “‘What Is it with You People and 8:30 Am?’ - Generation Y’s First Impressions of Us,” *Harvard Business Review*, accessed July 28, 2014, http://blogs.hbr.org/erickson/2007/07/what_is_it_with_you_people_and.html.

125. McCormack, “Careers: The Goods on Generation Y,” 1–3.

126. Jack Welch and Suzy Welch, “Generation Y’s Bad Rap,” *Bloomberg Businessweek*, September 27, 2007, 1, accessed July 28, 2014, http://www.businessweek.com/managing/content/sep2007/ca20070927_516544.htm.

127. Melissa H. Sandfort and Jennifer G. Haworth, “Whassup? A Glimpse into the Attitudes and Beliefs of the Millennial Generation,” *Journal of College and Character* 3, no. 3 (2002), 12–13, accessed March 9, 2011, <http://journals.naspa.org/cgi/viewcontent.cgi?article=1314&context=jcc>

(site discontinued) is a study of 16–18 year olds conducted in 2002 to determine attitudes on the “leading edge” of Generation Y. These students are now between 22 and 24 years old and in today’s workforce.

128. Ontario Ministry of Education, “Policy/Program Memorandum no. 124a,” accessed July 28, 2014, <http://www.edu.gov.on.ca/extra/eng/ppm/124a.html?view=print>.

129. James Kitfield, “Generation Y is Producing Good Soldiers,” *National Journal* 39, no. 3 (January 20, 2007): 26–27. While this article and the study it describes are American examples, Canadian generation Y soldiers have also demonstrated tenacity, bravery, and skill in combat, plus the flexibility to excel in the ever-shifting, complex series of challenges that counter-insurgency in Afghanistan provides. Master-Corporal Jason Dunnett, a generation Y soldier serving in a combat arms unit in Afghanistan at the time of writing, provides an excellent example of this flexibility in thinking during a partnered CF /Afghan National Police cordon-and-search operation, quoted in Eric Talmadge, “As US Starts Afghan Surge, Dug-in Canadians Plan Exit,” *San Francisco Examiner*, February 6, 2010, accessed September 5, 2010, <http://www.sfoxaminer.com/world/83714922.html> (site discontinued).

130. Omar El Akkad, “Canadians’ Internet Usage nearly Double the Worldwide Average” *The Globe and Mail*, March 8, 2011, accessed March 9, 2011, <http://www.theglobeandmail.com/news/technology/somnia/article1934508/> (site discontinued).

131. James Fallows, “Millennials’ Uncertain Future,” *National Journal* (May 8, 2010), accessed July 28, 2014, http://www.nationaljournal.com/njmagazine/nj_20100508_5760.php.

132. Arnsperger, “4GenR8tns: Succeeding with Colleagues.”

133. Shuo, Wan and Tang, “Generation Why - So What?,” 58.

134. Erickson, “10 Reasons Gen Xers.” The author has seen several occasions where very senior CF leaders, such as the Chief of the Defence Staff, the Chief of Military Personnel, and the Chief of the Land Staff, have received emails directly from eager, well-meaning generation Y soldiers offering suggestions, improvements, or asking for issues to be rectified. Often these issues were ones that had either solutions in progress or were the purview of lower levels of the chain of command, but generation Y impatience saw these concerns pushed to the top of the chain of command. Generation Y seems to take the view that if one “can” do something, such as send the Chief of the Defence Staff a direct email, then in many cases one “should.”

135. Helen Leggatt, “What’s the Difference between Gen X and Gen Y?” *Biz Report*, accessed July 28, 2014, http://www.bizreport.com/2008/07/whats_the_difference_between_gen_x_and_gen_y.html#.

136. El Akkad, “Canadians’ Internet Usage.”

137. Kitfield, “Generation Y is Producing Good Soldiers,” 26–27.

138. Results from a 2011 Netpop Research survey quoted in “Social Media - YouTube Tops Facebook, Twitter in User Satisfaction: MarketingProfs Article,” Marketing Profs Website, accessed March 3, 2011, <http://www.marketingprofs.com/charts/2011/4549/youtube-tops-facebook-twitter-in-user-satisfaction?adref=nlft030311> (subscription required).

139. A YouTube or Facebook search for the term “Canadian Forces” or related topics (Canadian Navy, Army, Air Force, etc.) yields many videos, pages, channels, and sites generated and posted by serving members.

140. Juliet O’Neill, “Movie Focuses on the Death of One of Afghan War’s ‘Regular Guys,’” *National Post*, November 9, 2010, accessed February 7, 2011, <http://news.nationalpost.com/2010/11/09/documentary-explores-regular-guys-in-afghan-war/#more-32476> (site discontinued).

141. Ibid.

142. *If I Should Fall*, directed by Brendon Culliton and Dan Heald, London, Ontario: Joint Media Group (2011), DVD.

143. *Details* magazine editor-at-large Jeff Gordinier, quoted in Laucius, “X at a Crossroads.”

144. Generational relations expert Tamara J. Erickson, quoted in “An Interview with Tammy Erickson, President of the Concours Institute,” YouTube video, 9:52, accessed July 28, 2014, <http://www.youtube.com/watch?v=rDAadaupMno&feature=related>.

145. Lush, “The Workplace Diva Has Arrived,” 56.

146. Claire Raines, “The Boomers & the Xers.” *Generations at Work*, (1999), accessed July 28, 2014, http://www.generationsatwork.com/articles_boomx.php.

147. Standing Senate Committee on Banking, Trade and Commerce, *The Demographic Time Bomb: Mitigating the Effects of Demographic Change in Canada* (Ottawa: Government of Canada, 2006) accessed July 28, 2014, <http://www.parl.gc.ca/39/1/parlbus/commbus/senate/com-e/bank-e/rep-e/rep03jun06-e.htm>.

148. While commanding a combat team in Afghanistan between fall 2009 and spring 2010, the author encountered this very challenge in dealing with his generation Y junior officers. While the author felt that the level, type, and style of interaction and attention he paid to the junior officers was sufficient, based on what he, as a junior officer, had received from his commanders, subordinates felt that they were abandoned and grew increasingly uncertain. This uncertainty manifested itself in their performance, and they grew increasingly hesitant to use their initiative or approach their commander with their concerns. The combat team’s sergeant-major, who observed this, approached the two junior officers and encouraged them to bring their concerns to the commander in a private forum. Several hours of discussion, both one-on-one and collectively, between the commander and junior officers resolved the issue. The author made a directed effort to interact individually with each of the junior officers, both alone and together, let them air their concerns, and provided individual attention, encouragement, and guidance. This act, and future close interaction, had an immediate positive effect on morale and performance throughout the rest of the deployment, which was characterized by consistent threat and danger that demanded engaged, aggressive, and attentive leadership.

149. Tamara J. Erickson, “The Baby Boomer-Generation Y Love Fest,” *Harvard Business Review*, April 28, 2008, accessed July 28, 2014, http://blogs.hbr.org/erickson/2008/04/the_baby_boomer_generation_y_1.html; Erickson, “10 Reasons Gen Xers”; Welch and Welch, “Generation Y’s Bad Rap,” 1–2; Catriona Lander, “Generations X & Y,” *Canadian Consulting Engineer* 47, no. 6 (Oct/Nov, 2006), 79, accessed July 28, 2014, <http://proquest.umi.com/pqdweb?did=1166631911&Fmt=7&clientId=1711&RQT=309&VName=PQD>; Paul Huggins, “Generation Next: With Four Different Age Groups in the Workplace, Bridging the Gap is Critical,” *McClatchy - Tribune Business News* (Aug 31, 2008); and Harvard Business Publishing, *Interview with Tamara J. Erickson, President of the Concours Institute*.

150. A business-school professor quoted in Fertik, “The Kids Are All Right” taught his classes in nine-minute blocks, punctuated by question periods to maintain student attention. Fertik hypothesizes that to meet generation Y’s demands, this time may have to be modified to a maximum of 60 seconds.

151. Wong and Gerras, *CU @ the FOB*, 26.

152. Major Cate Carter, “Citizen Soldier,” *Australian Army Journal* 7, no. 1 (Autumn, 2010): 111, accessed January 12, 2011, http://www.army.gov.au/lwsc/AAJ_VII1.asp (site discontinued).

153. Author experience from deployment to the Golan Heights, 2001–2002, and two deployments to Afghanistan in 2005 and 2009–2010.

154. Wong and Gerras, *CU @ the FOB*, 36.

155. *Ibid.*, 26. The author saw this unhealthy characteristic in young CF personnel as far back as 1998, when reliable satellite telephone service became available in some of the larger Canadian camps used by the NATO Stabilization Force in the former Yugoslavia. A soldier in the Canadian Armoured Car Squadron kept falling asleep while driving a Cougar armoured car during patrols, a hazardous proposition given the narrow, winding nature of the mountain roads that Canadians patrolled, with sharp drop-offs and very tight switchbacks. The soldier was medically examined for a physiological

reason for his inability to stay awake and interviewed in-depth by his chain of command. Only after examining the outgoing call records from the camp's telephone system and surreptitiously tracking the soldier's movements while off duty, the soldier's supervisor discovered that this soldier was spending inordinate amounts of time, hours at a stretch, usually between midnight and 6 a.m., speaking with his girlfriend in Canada on the telephone. As a result, he was unable to perform his primary duties during the day and frequently put his fellow soldiers at risk during operations. After several warnings and failure to modify his behaviour, the soldier was subjected to disciplinary proceedings under the National Defence Act, administratively counseled, and repatriated back to Canada.

156. Ray B. Williams, "Why Are You Not Like Me? The Generational Gap in the Workplace," *Psychology Today*, accessed July 28, 2014, <http://www.psychologytoday.com/blog/wired-success/200909/why-are-you-not-me-the-generational-gap-in-the-workplace>.

157. McCrindle and Beard, *Seriously Cool*, 33.

158. Hugh Smith, "The Military Profession in Australia: Crossroads and Cross-Purposes?," in *Future Armies, Future Challenges: Land Warfare in the Information Age*, ed. Michael Evans, Russell Parkin, and Alan Ryan (Crows Nest, New South Wales, Australia: Allen & Unwin, 2004), 203.

159. Beth J. Asch, John A. Romley, and Mark A. Toten, *The Quality of Personnel in the Enlisted Ranks*, MG-324 (Santa Monica: RAND Corporation - National Defense Research Institute, 2005), 31.

160. Colonel C. Thomas Climer, *Maintaining the Professionalism of the U.S. Army Officer Corps* (Carlisle Barracks, PA: United States Army War College, 2010), 12–13. While Colonel Climer's remarks concern the US Army, they are equally applicable to navies, air forces, and any other military bodies, including the CF.

161. Personal email, Lieutenant-Commander, Maritime Surface and Sub-surface Officer, January 31, 2011.

162. A 2005 Korn/Ferry study, quoted in Boris Groysberg, Andrew Hill, and Toby Johnson, "Which of These People is Your Future CEO?" *Harvard Business Review* 88, no. 11 (November 2010): 82, accessed July 28, 2014, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=54604570&site=ehost-live>.

163. Lieutenant-General (LGen) Peter Devlin, Commander, Land Force Command (public address, February 14, 2011, Canadian Forces College, Toronto). Cited with LGen Devlin's permission.

164. No clear definition for "early" attrition exists, but it generally indicates attrition soon after completion of training, precluding personnel from using their training to provide the CF any great benefit. For most occupations, any attrition prior to attaining five years' service can be viewed as "early." Nurses and medical officers in this study are identified as "early" with seven and ten years' service respectively, due to the high costs the CF incurs, in most cases, by sponsoring their medical training.

165. Canada, DND, "About the Army," Canadian Army, accessed February 10, 2011, <http://www.army.forces.gc.ca/land-terre/ata-asl/index-eng.asp> (site discontinued).

166. All figures in this paragraph, unless otherwise attributed, are from Auditor General of Canada, *2006 May Status Report of the Auditor General of Canada*, 65.

167. All EME officer information, unless otherwise attributed, is from Canada, DND, "Electrical and Mechanical Engineering Officer Fact Sheet," Canadian Forces Recruiting Group, accessed July 28, 2014, <http://www.forces.ca/en/job/electricalandmechanicalengineeringofficer-39#info-1> (link now connects to a video about this occupation).

168. Unless otherwise noted, all facts and figures in this paragraph are from Auditor General of Canada, *2006 May Status Report*, 65–66.

169. *Canadian Forces Manning by Rank Group and MOSID – DHRIM Custom Report, Ticket 3115169* (Ottawa: Director Human Resources Information Management Output Products, 2011), Provided by DHRIM via Ad-Hoc Request Form submitted January 19, 2011.

170. Auditor General of Canada, *2006 May Status Report*, 66.

171. Keith Thomas and Steve Bell, “Competing for the Best and the Brightest: Recruiting and Retention in the Australian Defence Force,” *Security Challenges* 3, no. 1 (2007): 101–102, accessed July 28, 2014, <http://www.securitychallenges.org.au/ArticlePDFs/vol3no1ThomasandBell.pdf>.

172. Canada, DND, *The Fight of Today – Military Personnel Planning and Management Document, Fiscal Year 2009–2010* (Ottawa: Chief Military Personnel | Director Military Personnel Planning and Programme Coordination, 2009).

173. David G. Allen, Phillip C. Bryant, and James M. Vardaman, “Retaining Talent: Replacing Misconceptions with Evidence-Based Strategies,” *Academy of Management Perspectives* 24, no. 2 (May 2010): 48–64, accessed July 28, 2014, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=51827775&site=bsi-live>.

174. E. McKeown, “Retention in the Upswing,” *T + D* 64, no. 3 (March 2010): 22.

175. Bill Carr, quoted in “Deputy Undersecretary of Defense for Military Personnel Policy Bill Carr Holds a Defense Department News Briefing on Recruiting and Retention in the Military Services,” *Political Transcript Wire* (October 13, 2009).

176. Chief of the Defence Staff, *CDS SITREP 02-11*, 15–16.

177. Canada, DND, *Canadian Forces Personnel Management Report*, 7.

178. It is given in both military and management terms that one person should have a span of control that sees them directly supervise no more than five to seven subordinates or subordinate reporting organizations. In 2007, the Canadian Forces Support Training Group had 60 full-time staff devoted to supervising PATs (author experience), so a figure of at least 60 is realistic and historical, even though it is outside the preferred supervision ratio.

179. Canada, DND, “CBI Chapter 204.” Since Sgt is the CF’s normal supervisory/instructor rank, it is used as the baseline for this estimate.

180. A senior US Army retention NCO, quoted in Crumbo, “In the Military: Retention.”

181. While “American, British, Canadian, Australian and New Zealand Armies’ Program—Optimizing Coalition Interoperability,” accessed July 28, 2014, <http://www.abca-armies.org/> identifies that New Zealand is a full ABCA member, it will not be covered in the scope of this study.

182. In terms of personnel numbers, capability, equipment, and limitations, the CF and ADF are most closely related. The CF and ADF are also both involved in operations in Afghanistan, domestic operations, and smaller international operations. While ADF attrition has historically been higher than CF attrition, their personnel situations are most similar to each other than they are to the UK or US.

183. Australia, Department of Defence, *Defence Annual Report 2009–2010* (Canberra: Commonwealth of Australia, 2010), accessed July 28, 2014, http://www.defence.gov.au/Budget/09-10/dar/dar_0910_v1_s4.pdf#nameddest=a7. This figure is as of the end of Fiscal Year 2010, not calendar year.

184. *Ibid.*

185. Introduction and “Key Defence Statistics” cover sheet for Australia, Department of Defence, *Defence Annual Report 2009–2010* (Canberra: Commonwealth of Australia, 2010), accessed July 28, 2014, http://www.defence.gov.au/Budget/09-10/dar/dar_0910_v1_s4.pdf#nameddest=a7.

186. Australia, Department of Defence, “ADF Permanent Pay Rates,” Australian Defence Force, accessed July 28, 2014, http://www.defence.gov.au/dpe/pac/Pay_Allow_Nov_10.pdf and Table B to Section 2

of Canada, DND, “CBI Chapter 204.” While this discrepancy seems large, observers must take the relative value and purchasing power differential of the Australian and Canadian dollars into account, plus the higher pay rates that certain Canadian specialist occupations receive.

187. Australia, Department of Defence, *Defence Annual Report 2009–2010*, 1-400; and Canada, DND, “CBI Chapter 204.”

188. Australian Defence Force, “Defence Personnel Environment Scan 2025,” accessed February 6, 2011, http://www.defence.gov.au/dpe/dpe_site/publications/DPES2025/chapter4b.pdf, 48 (site discontinued).

189. Australia, Department of Defence, *2008 Defence Attitude Survey | Summary of Results* (Canberra: Australian Defence Force, 2009), accessed December 16, 2010, http://www.defence.gov.au/dpe/dpe_site/publications/2008_Defence_Attitude_Survey_Summary_of_Results.pdf (site discontinued).

190. Thomas and Bell, “Competing for the Best,” 111.

191. Australia, Department of Defence, *Incoming Government Brief* (Canberra: Australian Defence Force, 2010), accessed Feb 18, 2011, <http://www.defence.gov.au/foi/docs/igb.pdf> (document moved); and Wenek, *Reg F Recruiting and Retention*, 1–24. At the time of each report’s publication, Australia was over strength by 1552 personnel and Canada by approximately 1200 personnel.

192. Mark Thomson, “Will Australia Have the Economic, Industrial and Workforce Skill Base to Support the ADF in 2020 and Beyond?,” *Australian Defence Force Journal*, no. 173 (2007): 101, accessed July 28, 2014, <http://proquest.umi.com/pqdweb?did=1393898411&Fmt=7&clientId=1711&RQT=309&VName=PQD>.

193. Australia, Department of Defence, “People in Defence: Generating the Capability for the Future Force,” Australian Defence Force, accessed December 16, 2010, http://www.defence.gov.au/dpe/dpe_site/publications/PIDWeb.pdf (site discontinued) indicates that by 2030 Australia will have a “shortfall of workers of around 530,000 ... and there will be skills shortages in most technical and professional occupations.”

194. Ursula Brennan, Permanent Undersecretary of Defence, *Transforming Defence: A British Perspective on Defence in a Time of Financial Challenge* (Washington, DC: British Embassy, 2011). The UK announced the retirement of its aircraft carrier, elimination of carrier-based fighter aircraft, and personnel reductions. These measures may see up to 25,000 military personnel cut across the UK.

195. UK, Ministry of Defence, *Post-SDSR Allowance Savings Measures Presentation Background Notes* (January 20, 2011), 1–14.

196. UK, Ministry of Defence, *UK Armed Forces Quarterly Manning Report at 1 October 2010* (Defence Analytical Services and Advice, 2010), accessed December 16, 2010, <http://www.dasa.mod.uk/applications/newWeb/wwwAccessible/apps/publications/pubsBreakdown.php?thiscontent=170&date=2010-11-10&pubType=1&PublishTime=09:30:00&styleIN=a1&fontIN=size100&from=listing&topDate=2010-11-10&disText=1%20October%202010> (site discontinued).

197. Claire Chissick, *The Effects of Separated Service on Retention in the British Army* (International Military Testing Association, 2005), accessed March 8, 2011, <http://www.internationalmta.org/Documents/2005/2005128P.pdf> (site discontinued).

198. Hans Pung et al., *Remuneration and Its Motivation of Service Personnel: Focus Group Investigation and Analysis* (Cambridge, UK: Rand Europe, 2007), 82.

199. United States, Department of Defense, *Active Duty Military Personnel by Rank/Grade as of January 31, 2011* (Washington, DC: Statistical Information Analysis Division, 2011), accessed March 14, 2011, <http://siadapp.dmdc.osd.mil/personnel/MILITARY/rg1101.pdf> (site discontinued).

200. Dr. Betty D. Maxfield, “Army Demographics - FY09 Army Profile,” Headquarters, Department of the Army, accessed December 9, 2010, https://www.armywell-being.org/skins/WBLO/display.aspx?action=display_page&mode=User&ModuleID=8cde2e88-3052-448c-893d-d0b4b14b31c4&ObjectID=d9c695fa-c830-40be-8402-947f4dbddf1f&AllowSSL=true (site discontinued). US Army strength has since risen to 568,115, of which 94,948 are officers. Put in context, the US Army has more lieutenant colonels (9763) from United States Department of Defense, *Active Duty Military Personnel by Rank/Grade as of January 31, 2011*, than Canada’s Regular Force Navy has personnel (8500), from Canada, DND, “Canadian Navy: Navy at a Glance,” Canadian Navy, accessed February 10, 2011, http://www.navy.forces.gc.ca/cms/12/12_eng.asp (site discontinued).

201. Dr. David Chu, speaking in “Undersecretary of Defense for Personnel and Readiness David S. C. Chu Holds a Defense Department News Briefing on Recruiting and Retention in the Military Services,” *Political Transcript Wire* (October 10, 2008).

202. Charles A. Henning, *U.S. Military Stop Loss Program: Key Questions and Answers* (Washington, DC: Congressional Research Service, 2009), accessed March 14, 2011, <http://www.fas.org/sgp/crs/natsec/R40121.pdf> (site discontinued). Interestingly, stop loss is a programme, authorized in 1984, that has been used by the US Department of Defense in the 1990–91 Gulf War, operations in Bosnia, and during the Kosovo air campaign of 1999. While widely viewed as a “backdoor draft” or “involuntary servitude,” every service member enlisted in recent years has been made aware of the programme and its potential to affect them.

203. “U.S. Military’s Increased Use of Bonuses Has Improved Recruitment and Retention” (June 14, 2010), RAND Corporation, accessed July 28, 2014, <http://www.rand.org/news/press/2010/06/14.html>.

204. Bill Carr, “Deputy Undersecretary of Defense,” 7.

205. A cross section includes Beth J. Asch et al., *Cash Incentives and Military Enlistment, Attrition, and Reenlistment* (RAND Corporation - National Defense Research Institute, 2010), 195.; Asch, Romley, and Toten, *The Quality of Personnel in the Enlisted Ranks* MG-324, 102.; Bernard D. Rostker, *America Goes to War: Managing the Force during Times of Stress and Uncertainty* (RAND Corporation, National Defense Research Institute, 2007), 124.; Tanja Blackstone PhD, “Compensation: U.S. Navy Research Initiatives and Applications,” in *Recruiting and Retention of Military Personnel – Final Report of Research Task Group HFM-107* (Neuilly-sur-Seine Cedex, France: North Atlantic Treaty Organization, 2007), 3H-1–3H-42, accessed July 28, 2014, <ftp://ftp.rta.nato.int//PubFullText/RTO/TR/RTO-TR-HFM-107///TR-HFM-107-03I.pdf>; and Joy Moini, Gail L. Zellman, and Susan M. Gates, *Providing Child Care to Military Families: The Role of the Demand Formula in Defining Need and Informing Policy*, Vol. 2011 (RAND Corporation - National Defence Research Institute, 2006), 138, accessed July 28, 2014, <http://www.rand.org/pubs/monographs/MG387.html>.

206. Canada, DND, *Canadian Forces Exit Survey* (Ottawa: Chief Military Personnel, 2008), 1-33; Canada, DND, *The Canadian Forces Retention Survey – 2008* (Ottawa: Chief Military Personnel), 1-96; and Canada, DND, *The Canadian Forces Retention Survey – 2010*, 1-16. The CF Retention Team provided the author examples of all three surveys in February 2011.

207. Canada, DND, *Results from Health and Lifestyle Information Survey of Canadian Forces Personnel 2008/2009, Regular Force Version* (Ottawa: Canadian Forces Health Services Group, 2011), accessed February 2, 2011, <http://www.forces.gc.ca/health-sante/pub/hlis-sssv/pdf/20082009-rgf-res-eng.pdf> (site discontinued); and Sean Norton, *The DND and Canadian Forces “Your-Say” Survey: Methodology and Preliminary Findings* (Ottawa: Directorate Human Resources Research and Evaluation, 2004), accessed January 22, 2011, <http://www.internationalmta.org/Documents/2004/Proceedings2004.pdf> (site discontinued). It is unclear whether the Continuous Attitude Survey program is still in effect or has been superseded.

208. Otis and Straver, *Review of Attrition and Retention*, 14.

209. Canada, DND, *Annual Report on Regular Force Attrition 2007/2008*, 38.

210. Nikki Holden, *Retention of Infantry Soldiers in the Canadian Forces* (Ottawa: DND - Director General Military Personnel Research and Analysis, 2010), 13.

211. Nikki Holden, *Retention of Air Force Officers in the Canadian Forces* [PowerPoint Briefing], (International Military Testing Association / Defence Research and Development Canada, 2010). Personal email, Lieutenant-Colonel, Fighter Pilot, January 21, 2011; personal email, Lieutenant-Colonel, Tactical Helicopter Pilot, January 21, 2011; personal email, Lieutenant-Colonel, Fighter Pilot, January 23, 2011; personal email, Major, Air Combat Systems Officer, January 27, 2011; personal email, Major, Air Combat Systems Officer (Maritime Helicopter), February 22, 2011; personal email, Major, Tactical Helicopter Pilot - Releasing from CF in May 2011, February 18, 2011; personal email, Major, Air Combat Systems Officer (Maritime Patrol Aircraft), January 27, 2011; personal email, Major, Maritime Patrol Aircraft Pilot, February 5, 2011. A number of pilot and air combat systems officers reviewed the Holden reference in January/February 2011. The reviewers supported the study's findings, less the finding that pay and benefits were a dissatisfier for pilots. A maritime patrol aircraft pilot noted: "I think the pay/benefits thing for pilots is a bit of a red herring. ... Airline guys are getting back IN [to the CF] to top up their pensions nowadays."

212. Canada, DND, *Results from Health and Lifestyle Information Survey of Canadian Forces Personnel 2008/2009, Regular Force Version*, 60. While this document is not an official "personnel" study devoted specifically to attrition and retention, its findings can and should be incorporated into CF efforts to build a "true picture." The satisfaction ratings in single quotations are taken directly from the survey's Likert Scale responses.

213. "Frederick Herzberg - 2 Factor Hygiene and Motivation Theory," Accel-Team, accessed July 28, 2014, http://www.accel-team.com/human_relations/hrels_05_herzberg.html.

214. Zhigang Wang, *Recruiting and Retaining Military Personnel: An Exploration of Cash Reward Programs and their Effectiveness*, DGMPRA TM 2010-009 (Ottawa: Director General Military Personnel Research and Analysis, 2010), 29.

215. Frederick Herzberg, "One More Time: How Do You Motivate Employees?," *Harvard Business Review* 81, no. 1 (January 2003): 87-96, accessed July 28, 2014, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=8796887&site=ehost-live>.

216. Sabine Cosack, Matthew Guthridge, and Emily Lawson, "Retaining Key Employees in Times of Change," *McKinsey Quarterly Member Edition* (August 2010): 4-5, accessed July 28, 2014, https://www.mckinseyquarterly.com/Organization/Talent/Retaining_key_employees_in_times_of_change_2654.

217. Herzberg, "One More Time," 87-96.

218. Herzberg's "2 Factor Hygiene and Motivation Theory" also theorizes that without a basic level of satisfaction in hygiene factors, no level of motivation factors will result in satisfaction. Much as racing cars gain more performance and speed from losing weight rather than gaining horsepower, personnel systems can gain more from reducing dissatisfaction (which is also cheaper, as it generally involves little additional expenditure to change existing processes) than by trying to add motivators.

219. Ronald D. Fricker, *The Effects of Perstempo on Officer Retention in the U. S. Military* (Santa Monica, CA: Rand Corporation, 2002), 46, accessed July 28, 2014, <http://www.rand.org/publications/MR/MR1556/>.

220. Kathy Michaud, *Task Force Afghanistan: CF Exit Survey 2008-2010 Results* (Ottawa: DND, Director General Military Personnel Research and Analysis, 2010), 10.

221. Gates, *United States Secretary of Defense Speech*.

222. Asch et al., *Cash Incentives and Military Enlistment*, 85.

223. Colonel Colin Mackay, "CF Health and Lifestyle Information Survey," *The Maple Leaf*, January 26, 2011.

224. Major Rob Morrow, "PERSTEMPO/OPSTEMPO and Quality of Life," in *Recruiting and Retention of Military Personnel*.

225. Personal email, Master Warrant Officer, Combat Arms, February 4, 2011. The subject left the CF, then rejoined after several years out of service, motivated in large part by the desire to serve in Afghanistan and the fact that he found civilian employment—while better-paying and more stable—far less satisfying and interesting than service in the CF.

226. CF research contributions to recent international forums include Kathy Michaud, “Retention & Attrition Research: Overview of the Canadians’ Perspective” (Quantico, VA: Military Operations Research Society, June 22–24, 2010), accessed July 28, 2014, <http://www.mors.org/UserFiles/file/2010%20Personnel/WG5/Presenter%207%20Michaud%20cleared.pdf>; Manchun Fang and Paul Bender, *Identifying Contributors to Changes in Attrition* (Ottawa: DND, Director General Military Personnel Research and Analysis, 2010), 10; Fariya Syed, “Gender and Minority Issues,” in *Recruiting and Retention of Military Personnel*; and Wang, *Recruiting and Retaining Military*, 61.

227. Rear-Admiral P. A. Maddison, *MARLANT Retention Guidance* (Halifax: Maritime Forces Atlantic, September 30, 2008), 1–2.

228. Michaud, *Task Force Afghanistan*, 3. Dr. Michaud notes on page 3 of the report that “given the low response rate, caution is warranted when interpreting these results as this sample might not be representative of the voluntarily releasing population.”

229. Canada, DND, *The Canadian Forces Retention Survey - 2010*, 1-16.; Canada, DND, *Canadian Forces Exit Survey*, 1-33; Holden, *Retention of Infantry Soldiers*, 16; Valerie Toussaint and Nicholas Marum, *Factors Affecting Members Decisions to Leave the Canadian Forces: A Quantitative & Qualitative Examination of the CF Retention Survey for Signal Operators (Sig Op) MOS ID 00329* [with 0–3 years of Regular Force service] (Ottawa: DND, Director General Military Personnel Generation Requirements Attrition/Retention Team, 2007); and Michaud, *Task Force Afghanistan*, 17.

230. Chissick, *The Effects of Separated Service*, 7.

231. Personal email, Master Warrant Officer, Combat Arms.

232. Michael Rosenberg and Bonnie Nixon, “Stay Interviews: A Retention Strategy for Forward Thinking Organizations,” *Human Resources IQ*, accessed July 28, 2014, <http://www.humanresourcesiq.com/talent-management/columns/stay-interviews-a-retention-strategy-for-forward-t/>.

233. Personal email, Major, Combat Arms, January 31, 2011. In combat arms units, the adjutant is the most senior of the unit’s captains. They are responsible to the commanding officer for overseeing the unit’s personnel administration, taking care of the unit’s soldiers administratively, ensuring the proper application of the Canadian Forces Personnel Appraisal System (CFPAS), and CF personnel policy. This comment is supported by multiple interviews and author experience. The last comment concerning exit surveys is very telling.

234. Many businesses, such as Home Depot, Staples Business Depot, and Canadian Tire, offer customers the opportunity to complete a survey, which in return enters them into a contest to win a gift card, shopping spree, or other reward.

235. Canada, DND, *CF Military Personnel Instructions 06/05 - Administering the CF (Regular Force) Exit Survey*, 2005.

236. Personal email, Master Warrant Officer, Combat Arms.

237. In *Review of Attrition and Retention*, i-66, Otis and Straver briefly discuss career stages. They also discuss Army lieutenant-colonels as a specific group, but in general, the correlation between age / career stage and responses could be defined more clearly in future research.

238. Personal email, Major, Air Combat Systems Officer.

239. Two personal emails, Lieutenant-Colonels, Fighter Pilots.

240. Interview, Lieutenant-General (LGen) W. Semianiw, Commander, Canada Command, February 18, 2011. LGen Semianiw was the Assistant Chief Military Personnel from 2006 to 2007 and the CMP from 2007 to 2010. In 2010, he was promoted and appointed Commander of Canada Command, responsible for all CF domestic and North American continental operations. As an operational commander, he had the unique perspective of having to employ personnel generated, administered, and affected by the very policies and principles that he, as CMP, put into effect. This perspective is critical to any understanding of CF personnel issues, as it bridges the gap between the CF national strategic/corporate perspective and the operationally focused perspective.

241. As noted by Morrow, “PERSTEMPO/OPSTEMPO,” 3G-1-3G-16.

242. Interview, LGen W. Semianiw, Commander, Canada Command. This anecdote was related by the interviewee from his time both as CMP and his time as an operational commander, where many of the staff officers and sr NCOs in his headquarters fell into the “30+1” category.

243. Personal email, Major, Combat Arms, January 24, 2011.

244. Interview, Major, Communications and Electronic Engineering (Army), February 10, 2011; and interview, Lieutenant-Colonel, Communications and Electronic Engineering (Air), February 10, 2011. Both indicated that technicians in their respective occupations were often prone to being “too valuable” and forced into a certain career path, often based on specialist skills, which had the potential to create dissatisfaction.

245. Otis and Straver, *Review of Attrition and Retention*, 53.

246. Clifford Geertz, “From the Native’s Point of View: On the Nature of Anthropological Understanding,” *Bulletin of the American Academy of Arts and Sciences* 28, no. 1 (October 1974): 26–45, accessed July 28, 2014, <http://www.jstor.org/stable/3822971> (requires registration for full online access). Geertz defines experience-near concepts as those that an individual might naturally and effortlessly use to define what they or their fellows see, feel, think, and imagine. Experience-distant concepts are ones which specialists, analysts, ethnographers, or other “objective outsiders” use to forward their “scientific, philosophical or practical aims.” It is a matter of degree and perspective.

247. Renato I. Rosaldo Jr., “A Note on Geertz as a Cultural Essayist,” *Representations*, no. 59, Special Issue: The Fate of “Culture”: Geertz and Beyond (Summer 1997): 30–34, accessed July 28, 2014, <http://www.jstor.org/stable/2928813> (requires registration for full online access).

248. Canada, DND, A-PA-005-000/AP-004, *Leadership in the Canadian Forces: Conceptual Foundations* (Kingston: Canadian Defence Academy, Canadian Forces Leadership Institute, 2005), 55.

249. Wong, *Generations Apart: Xers and Boomers*, 19–20.

250. Canada, DND, *The Canadian Forces Retention Survey – 2010*, 1–6; and Chief Military Personnel, *Military Personnel Retention Strategy*, 1–10.

251. Virtually all CF member interviews and author correspondence, plus author experience, support this statement. Blog posts, mess conversations, interviews, and discussions support this finding. A search on www.army.ca, a popular online military-themed discussion board, offers several discussion forums concerning retention bonuses and their applicability to the CF.

252. Wang, *Recruiting and Retaining Military*, 14–15. Australian bonuses are offered to Sgts and squadron leader equivalent ranks, which generally tend to be generation X members, a group most susceptible, as identified above, to dissatisfaction and early attrition, the impact of which will be most keenly felt.

253. *Ibid.*, 15–20.

254. Gregor Ferguson, “Catch and Keep: Defence Looks at ADF Manpower to 2030,” *Australian Defence Magazine*, accessed July 28, 2014, <https://www.australiandefence.com.au/47CA9060-F807-11DD-8DFE0050568C22C9>.

255. Barry Rollings, “Taking Aim at Retention,” *Navy: The Sailors’ Paper*, accessed July 28, 2014, <http://www.defence.gov.au/news/navynews/editions/5002/features/feature5.htm>; and Ferguson, “Catch and Keep.”

256. Asch et al., *Cash Incentives and Military Enlistment*, iii.

257. Ibid.

258. Ibid.

259. “U.S. Military’s Increased Use of Bonuses Has Improved Recruitment and Retention,” June 14, 2010, RAND Corporation, accessed July 28, 2014, <http://www.rand.org/news/press/2010/06/14.html>.

260. Personal email, Dr. Leonard Wong, Professor, Strategic Studies Institute, United States Army War College, Carlisle Barracks, PA, March 3, 2011.

261. Wang, *Recruiting and Retaining Military*, 32.

262. Ibid., iv.

263. Major Mark Gasparotto, “Quality of Life Survey” (Toronto: Canadian Forces College, 2011), offers several anecdotal comments and statistical evidence through analysis of a survey of CF leaders. He identifies the adverse effects of quality of life initiatives, welfare programs during operations, and allowances such as the Land Duty Allowance, which is selectively applied to certain Army units and not others. Clearly, any perceived inequity in a financial or other benefit will generate a degree of dissatisfaction due to perceptions of unfairness.

264. Asch et al., *Cash Incentives and Military Enlistment*, 195.

265. Cosack, Guthridge, and Lawson, “Retaining Key Employees,” 4-5. The effects of both cash and non-cash motivators also differ from generation to generation and differ in their effects on CF personnel by their age and by career stage, making targeting them effectively a leadership challenge.

266. UK, Ministry of Defence, *Long Service Advance of Pay*, Vol. 2010, (British Army, 2009), 1-19.

267. Ibid. Note: SDSR may see this programme curtailed.

268. UK, Ministry of Defence, *Arrangements for Regular Army Personnel Wishing to Apply for Career Breaks* (British Army, 2005), 1.

269. Ibid., 2-4.

270. Laura L. Miller, “Give Them Sabbaticals,” originally published in *USA Today*, May 7, 2008 (RAND Corporation, 2008).

271. Chapter 8 of Canada, DND, A-PP-005-LVE/AG-001, *Canadian Forces Leave Policy Manual*, 85, governs LWOP and its limitations. The approval level for any long period of LWOP is very high and administratively difficult.

272. Ferguson, “Catch and Keep.”

273. Ibid.

274. United States Army, “MOS 79S: Retention NCO (Active Component),” US Army Information Site, accessed February 4, 2011, <http://www.us-army-info.com/pages/mos/adjutant/79s.html> (site discontinued).

275. A company normally has between 50 and 200 soldiers. Normally, a unit is comprised of three or more companies.

276. Personal email, David Smith, Vice President, Client and Market Development, Dynamic Logic, A Millward Brown Company, February 15, 2011.

277. McCormack, “Careers: The Goods on Generation Y,” 1–3.
278. Quoted in Dr Lyle Hogue, *A Comparison Study of the Major Factors Affecting Employee Retention in the U.S. Army and Corporate America* (Science Application International Corporation, 2006), 13.
279. Allen, Bryant, and Vardaman, “Retaining Talent,” 54.
280. Morrow, “PERSTEMPO/OPSTEMPO,” 3I-4.
281. Cosack, Guthridge, and Lawson, “Retaining Key Employees,” 4.
282. Fariya Syed and Major Rob Morrow, “Recruiting and Retention of Military Personnel: Canada,” in *Recruiting and Retention of Military Personnel*, 2B-13.
283. Gates, *United States Secretary of Defense Speech*.
284. Canada, DND, *Annual Report on Regular Force Attrition 2007/2008*, 39. This figure must be taken with caution due to the small exit survey return rate, but given the lack of other data, it will be taken as representative for this paper’s purposes.
285. Thomas and Bell, “Competing for the Best,” 97–118.
286. Subhendu Dey, “Employee Retention – A Key to Organizational Growth,” *Globsyn Management Journal* 3, no. 1 (January 2009): 46, accessed July 28, 2014, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=45828229&site=bsi-live>.
287. Gasparotto, “Quality of Life Survey”; Major Rob Morrow, “Recruiting and Retention of Military Personnel: Influences of Quality of Life and Personnel Tempo,” in *Recruiting and Retention of Military Personnel*, 267–276; Morrow, “PERSTEMPO/OPSTEMPO,” 3G-1–3G-16; and Canada, DND, *Results from Health and Lifestyle Information Survey of Canadian Forces Personnel 2008/2009, Regular Force Version*, 1-203.
288. Leonard Wong, *Developing Adaptive Leaders: The Crucible Experience of Operation Iraqi Freedom* (Carlisle, PA: US Army War College, Strategic Studies Institute, 2004), 13. Embedded quotation is from Leonard Wong, *Stifling Innovation? Developing Tomorrow’s Leaders Today* (Carlisle, PA: US Army War College, Strategic Studies Institute, 2002).
289. Canada, DND, “Canadian Forces Personnel Appraisal System (CFPAS),” Chief Military Personnel, accessed March 16, 2011, <http://www.cmp-cpm.forces.gc.ca/cfpas-sepfc/index-eng.asp> (site discontinued).
290. Fred Kaplan, “Challenging the Generals,” *The New York Times*, August 26, 2007, accessed July 28, 2014, <http://www.nytimes.com/2007/08/26/magazine/26military-t.html>.
291. Results of a study of 250 US Military Academy (West Point) graduates from the classes of 1989, 1991, 1995, 2000, 2001, and 2004 published in Tim Kane, “Why our Best Officers Are Leaving,” *The Atlantic* (January/February 2011), accessed July 28, 2014, <http://www.theatlantic.com/magazine/archive/2011/01/why-our-best-officers-are-leaving/8346/>.
292. Ibid. The following articles all discuss trust between junior officers and their superiors, commenting that this lack of trust and confidence causes the junior officers (many of whom are late generation-X and generation-Y personnel, prone to career-hopping by virtue of their generational make-up) to leave military service. James Dao, “Life and Death Decisions Weigh on Junior Officers,” *The New York Times*, December 20, 2010, accessed July 28, 2014, http://www.nytimes.com/2010/12/21/world/asia/21captain.html?_r=2&hp; G. I. Wilson, “Essay 5 - Careerism,” in *The Pentagon Labyrinth: 10 Short Essays to Help You Through It*, ed. Winslow T. Wheeler (Washington, DC: Center for Defense Information, 2011), 43–59; Lt Col Paul L. Yingling, “General Failure - America’s Military Leadership Is in Crisis,” *Armed Forces Journal* (2007); Wong, *Developing Adaptive Leaders*, 23; “Leadership: The Boss Is an Idiot and Is Getting Us Killed”; and Captain Tim Hsia, “Today’s Junior Army Officers,” *Small Wars Journal*, accessed July 28, 2014, <http://smallwarsjournal.com/blog/2008/03/todays-junior-army-officers/>.

293. Interview, LGen W. Semianiw. LGen Semianiw also identified the necessity for majors/lieutenant-colonels to have abilities once thought to be only the purview of general and flag officers.

294. The CF identifies majors, lieutenant-colonels and colonels as senior officers, while those above the rank of colonel are general (Army and Air Force) or flag (Navy) officers.

295. This factor is particularly distressing when one considers that MP soldiers are promoted to corporal immediately after completing training, ostensibly to give even newly promoted MPs more credibility and authority in carrying out their duties, while most other CF enlisted personnel must serve for three to four years before being eligible for promotion to corporal. In practical terms, this policy has given rise to derision from much of the CF towards these so-called “insta-corporals,” who also receive a specialist pay rate over and above most other CF occupations. Further information concerning NCO promotion and career policy can be found in Canadian Forces Administrative Order (CFAO) 49-4, Career Policy Non-Commissioned Members Regular Force.

296. Foreign Policy Research Institute, *Multimedia: Who Will Fight for Us? (Personnel)* - FPRI “Defense Showstoppers” Conference. A 360-degree assessment is one where the individual being assessed is evaluated using input from superiors, peers, and subordinates, giving a full or 360-degree view of the individual from every perspective.

297. As indicated previously, “treatment of poor performers” was identified in several surveys as a dissatisfier. Like many others, it was not a large enough dissatisfier to be identified as a primary release reason, but in concert with a host of other dissatisfiers, it definitely plays a role.

298. General W. J. Natynczyk, Chief of the Defence Staff, quoted in Andrew Hanon, “12 Charged Over Drug Lab on Wainwright Military Base,” *Edmonton Sun*, June 16, 2010, accessed January 12, 2011, http://www.edmontonsun.com/news/columnists/andrew_hanon/2010/06/16/14416751.html (content no longer available).

299. Canada, DND, “Meth: The New Drug of Choice,” Canadian Forces Health Services - Strengthening the Forces, accessed January 25, 2011, <http://www.forces.gc.ca/health-sante/ps/hpp-pps/aap-sdp/dmeth-eng.asp> (content no longer available) identifies, in bold letters, that the CF has a “ZERO TOLERANCE” policy on use of meth and any other illegal drugs.

300. Defence Administrative Orders and Directives (DAOD) 5019-3, Canadian Forces Drug Control Program, 2009, 2.

301. Queen’s Regulations and Orders for the Canadian Forces (QR&O) 20, Canadian Forces Drug Control Program, Paragraph 20.02 – Application, Vol. 1, 2001, 1-13.

302. Canada, DND, A-AD-005-DCP/AG-000, *Canadian Forces Drug Control Program Manual* (Ottawa: Director General Personnel and Family Support Services - CF Drug Control Program Coordinator, 2008), 33.

303. *Ibid.*, 34

304. *Ibid.*, 54–56. These pages outline the steps that commanding officers must follow even to order a CF member to be tested for drug use.

305. *Ibid.*; QR&O 20, Canadian Forces Drug Control Program, 1-13; and DAOD 5019-3, Canadian Forces Drug Control Program.

306. Canadian Forces General message (CANFORGEN) 117/10 - Scoring of Promotion Selection Board Second Official Language Competencies, Chief Military Personnel, 2010; DAOD 5039-7, Second Official Language Education and Training for CF Members, 2009; DAOD 5039-6, Delivery of Training and Education in both Official Languages, 2009; CANFORGEN 104/04 - Second Language (SL) Certification for Canadian Forces (CF) Members, Assistant Deputy Minister (Human Resources - Military), 2004; CFAO 9-21 Canadian Forces Language Training, Qualifications and Testing - Official Languages, 1988; DAOD 5039-0, Official Languages, Chief of the Defence Staff, 1998; and CANFORGEN 045/01 - Bilingual Officer Corps Policy, Chief of the Defence Staff, 2001.

307. CANFORGEN 117/10 - Scoring of Promotion Selection Board Second Official Language-Competencies; and CANFORGEN 045/01 - Bilingual Officer Corps Policy.

308. Canada, DND, *Annual Report on Regular Force Personnel 2008/2009*, C-7, C-8. The rank of captain was selected for examination, as it is often known as the “working rank” and is the most populous rank for CF officers.

309. Language testing can be administratively cumbersome and is generally not offered to junior soldiers. A routine and ongoing commitment, second-language profiles are valid for a period of five years, after which they expire unless a CF member is classified as officially bilingual or “exempt” from further testing.

310. Personal email, Dany Tremblay, Second Language Evaluation Manager, Language Programs Delivery, Canadian Defence Academy - Second Language Training availability in the Canadian Forces, January 26, 2011.

311. “Human Relations Contributors - Elton Mayo’s Hawthorne Experiments,” Accel-Team, accessed July 28, 2014, http://www.accel-team.com/motivation/hawthorne_02.html; and “Human Relations Contributors - The Hawthorne Effect,” Accel-Team, accessed July 28, 2014, http://www.accel-team.com/motivation/hawthorne_01.html. Both discuss the Hawthorne Effect in detail. Essentially, despite the experimenters in a telephone relay assembling plant lowering worker comfort, changing lighting, enforcing longer work hours, and removing breaks, employee productivity rose. Only after analysis did Mayo discover that researcher interaction, conversation, engagement with, and attention towards the workers was the reason for this increased productivity and motivation. Attention and interest from authority figures was a motivator that overrode the potential dissatisfiers of poor working conditions and changes in work environment.

312. Personal email, Major, Combat Arms.

313. Anonymous comment captured by a survey of chief and master warrant officers as well as senior officers, in Gasparotto, “Quality of Life Survey.” While CF official nomenclature is “Honours and Recognition,” administered by the Director of Honours and Recognition, a CMP organization, it is known by many CF members by its historical or widely accepted name, “Honours and Awards.” Perusing records of past Honours and Recognition, one can find some personnel awarded Meritorious Service Decorations, a fairly significant honour, for leadership in combat, while other combat leadership actions are rewarded with significant yet less-prestigious recognition such as mentions in dispatches, accessed July 28, 2014, www.gg.ca. One can also find personnel awarded Meritorious Service Decorations for service in headquarters staff functions in Canada. While headquarters service is important, this perceived disparity plainly identifies a disconnect in recognition consistency.

314. CANFORGEN 188/07 - The Future of the Order of Military Merit, Chief Military Personnel, 2007.

315. CANFORGEN 056/10 - Guidelines: Order of Military Merit, Chief Military Personnel, 2010. For ease and clarity of reading, future references will use only Army and Air Force ranks, not their naval equivalents, although everything discussed applies equally to naval personnel at their equivalent ranks.

316. CANFORGEN 006/11 - Order of Military Merit - 61st List, Chief Military Personnel, 2011. The OMM is known, often sardonically, as the “Old Man Medal” by CF personnel, reflecting the general age of its recipients. A standing joke on how to nominate someone for the OMM is that the first line of the nomination letter must say “Colonel X has served in the CF since” Rather than seen as something earned to recognize good performance, many junior and field-grade officers see the OMM as something of a “gimme” medal awarded to senior and general officers as a pre-retirement present, not for any particularly meritorious or noteworthy service.

317. John P. Hausknecht, Julianne Rodda, and Michael J. Howard, “Targeted Employee Retention: Performance-Based and Job-Related Differences in Reported Reasons for Staying,” *Human Resource Management* 48, no. 2 (March 2009): 269–288, accessed July 28, 2014, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=37267994&site=bsi-live>.

318. Personal email, Major, Combat Arms.

319. Scott Fontaine, “Airmen Bemoan Number of ‘Feel-Good’ Ribbons,” *Air Force Times*, March 7, 2011, accessed July 28, 2014, <http://www.airforcetimes.com/news/2011/03/air-force-airmen-bemoan-feel-good-ribbons-030711w/>.

320. While civilian management theory uses “job satisfaction,” this paper does not, given that CF service encompasses a whole lifestyle and persona, more so than just a “job.”

321. Toussaint and Marum, *Factors Affecting Members Decisions*, i-87, identifies that some survey respondents were unhappy with being trained in specialist skills, yet not being employed in ways that permitted them to use them. For combat arms personnel, deploying to Afghanistan and fighting is a significant QoE issue. Personal email, Commander, Maritime Surface and Sub-surface Officer, February 8, 2011; Interview, Lieutenant-Commander, Maritime Surface and Sub-surface Officer, February 9, 2011; and Interview, Commander, Maritime Surface and Sub-surface Officer, February 9, 2011. Each indicates that Naval personnel view deployments the same way; not being permitted to sail and conduct meaningful operations is a Quality of Employment issue. Interview, Lieutenant-Colonel, Pilot (Tactical Helicopter), February 5, 2011; Personal email, Lieutenant-Colonel, Fighter Pilot; Personal email, Lieutenant-Colonel, Tactical Helicopter Pilot; Personal email, Lieutenant-Colonel, Fighter Pilot; and Personal email, Major, Air Combat Systems Officer. These views also reinforce that being permitted to fly is significant to aircrew QoE; those who, in the words of one fighter pilot, “hang up the goggles” due to rank and age but do not feel that they will attain a senior CF leadership position and rank have little motivation to remain in the CF and often seek flying employment in the civilian world.

322. Results of the National Study of the Changing Work Force conducted by the US Families and Work Institute, quoted in Hogue, *A Comparison Study*, 18.

323. Personal email, Commander, Maritime Surface and Sub-Surface Officer. Variations on this theme were common throughout author research. In fact, it seemed that when those “givens” of CF service—strong leadership, empowering subordinates, encouraging initiative, and not being permitted to complete tasks as trained—were absent, so was motivation, regardless of occupation, rank, years of service, or career stage.

324. Rosenberg and Nixon, “Stay Interviews,” 2. This also indicates that employees may cite pay as a reason for leaving during exit interviews, but this is “window dressing” and a simple answer that employees use to avoid having to explain situations fully, often face-to-face to the supervisor, who may be a prime factor in their decision to leave.

325. Bricker and Wright, *Chief of Land Staff Presentation*, 61.

326. Ramage, “Advertising Is War”; Michael Friscolanti, “Bad News: We’re Finally Hiring | Casualties Spark Recruitment in Canadian Forces,” *Macleans*, October 2, 2006, 18, accessed October 10, 2010, <http://www.encyclopediecanadienne.ca/index.cfm?PgNm=TCE&Params=M1ARTM0012972> (content no longer available).

327. Personal email, Master Warrant Officer, Combat Arms. It is quite obvious that this individual’s QoE dropped due to a number of factors—not being permitted to do a job he loved, a posting away from soldiering, and being forced to conduct administrative tasks sending others on deployment while being precluded from doing so himself. This soldier did release from the CF and, despite earning higher wages in the civilian sector for three years, eventually rejoined the CF.

328. Interviews and emails with every combat arms officer who served as a unit adjutant identified this trend. From the soldier perspective, it was administratively easier and a much clearer path to follow to release from the CF, then, in some cases in as little as a week later, rejoin the CF at a recruiting centre in a new occupation, than attempt to reclassify while serving.

329. Stephen P. Robbins, *Essentials of Organizational Behavior*, 8th ed. (Upper Saddle River, NJ: Pearson Prentice Hall, 2005), 59.
330. Personal email, David Smith, Vice President, Client and Market Development, Dynamic Logic, a Millward Brown Company, identifies that the US Army would often offer a soldier his or her choice of available occupations in order to encourage a re-commitment to further service.
331. Personal email, Major, Tactical Helicopter Pilot - Releasing from CF in May 2011.
332. Personal email, Major, Combat Arms. This statement was supported by multiple interviews and author experience as a combat arms leader for almost 20 years.
333. Matthew Fisher, "Afghan Troops to Face Fresh Challenge in Canada's Far North: Commander," *Ottawa Citizen*, October 22, 2010, accessed October 22, 2010, <http://www.ottawacitizen.com/news/SOMNIA/3708752/story.html> (content no longer available).
334. An outstanding video portrait of Canadian soldiers fighting in Afghanistan is *Alpha Company, 2nd Platoon "Red Devils" of Edmonton, Canada, Conducts a Dawn Raid on a Taliban Compound, Helmand Province, July 13, 2006*, Internet Video Clip, directed by Scott Kesterson Solo Journalism and Visual Storytelling (2006), accessed December 20, 2010, http://www.youtube.com/watch?v=9_S9P1kMNUm (video no longer available), while Andrew, "Battle of Panjawai and Beyond," *Small Dead Animals*, accessed July 28, 2014, <http://www.smalldeadanimals.com/archives/004342.html>, is a first-hand account written by a junior artillery officer after sustained, intense combat in Afghanistan, which reflects the pride, motivation, and career satisfaction that service in operations brings, despite its inherent risks and threat.
335. DAOD 5031-10, *Adventure Training*, 2003 identifies CF policy towards adventure training. It is currently restrictive and administratively burdensome. Other militaries, notably the UK, have more liberal adventure training policies that ensure that personnel are able to "work hard and play hard" under the aegis of military training that pushes them to seek and overcome challenges outside the purely military spectrum.
336. Devlin, public address.
337. Coleman H. Peterson, "Employee Retention: The Secrets Behind Wal-Mart's Successful Hiring Policies," *Human Resource Management* 44, no. 1 (Spring, 2005): 85–88, accessed July 28, 2014, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=16363123&site=bsi-live>.
338. "CBC News in Depth: Gen. Rick Hillier," Canadian Broadcasting Corporation, accessed February 18, 2011, <http://www.cbc.ca/news/background/hillier/> (content no longer available).
339. Hausknecht, Rodda, and Howard, "Targeted Employee Retention," 284.
340. Lieutenant-General Theodore C. Stroup, "Leadership and Organizational Culture: Actions Speak Louder than Words," *Military Review* 76, no. 1 (January–February 1996): 49.
341. MLRS is an expensive, long-range, precision indirect fire system. Canada has never purchased MLRS, although many soldiers would dearly love to see it fielded due to its exceptional capability.
342. An IVECO Italy–designed light truck built under license by Western Star Trucks in Kelowna, British Columbia, the LSVW cost the taxpayer roughly \$80,000 per copy in 1990s dollars. As Taylor and Nolan, *Tarnished Brass*, 122–124 note, it failed military acceptance trial performance tests yet was still purchased and fielded, over better-performing competitors.
343. "Top General Calls Liberal Rule 'Decade of Darkness,'" CanWest Media Works Publications, accessed July 28, 2014, <http://www.canada.com/ottawacitizen/news/story.html?pid=d569d0fb-d9cf-4119-84cb-39dd89571625>. Former Chief of the Defence Staff General Rick Hillier used this term to describe "the immense, the negative impact of the defence expenditure reductions in 1994 and the lasting, almost negative legacy that they brought into effect ... some deep wounds ... in the Canadian Forces over this past, what I would call, a decade of darkness." The term has since become part of the Canadian defence and security sphere's popular lexicon and is widely used by defence critics, analysts, politicians, journalists, and pundits.

344. Robert I. Sutton, “Why Good Bosses Tune in to Their People,” *McKinsey Quarterly Member Edition* (August, 2010): 4, accessed July 28, 2014, https://www.mckinseyquarterly.com/Organization/Talent/Why_good_bosses_tune_in_to_their_people_2656.
345. Canada, DND, “DGCB - Frequently Asked Questions - ISSUE: CF Pay,” Director General Compensation and Benefits, accessed February 17, 2011, <http://www.cmp-cpm.forces.gc.ca/dgcb-dgras/ps/pay-sol/faq/index-eng.asp> (content no longer available).
346. Pung et al., *Remuneration and Its Motivation*, 32.
347. Canada, DND, “CBI Chapter”; and “Income Tax Calculator Canada | Tax Payable, Average Tax Rate,” accessed July 28, 2014, <http://www.tax-services.ca/canadian-tax-calculator/income-tax-calculator-canada.html>.
348. Personal email, Major, Aerospace Engineer Officer (Maritime Helicopter), March 9, 2011.
349. A Canadian LAV [light armoured vehicle] III Infantry Fighting Vehicle’s primary turret-mounted weapon is the M242 Bushmaster 25-millimetre cannon. This weapon fires 200 high-explosive or armour-piercing projectiles per minute, which have an effective range of 2000 metres, but a lethal radius thousands of metres farther, making the consequences of fire considerable. Equipped with both optical and thermal sights, the LAV III can fire effectively during both day and night operations. For more information about CF land equipment, weapons, and vehicles, see the Canadian Army website, accessed July 28, 2014, www.army.gc.ca.
350. Norton, *The DND and Canadian Forces*, 507–513.
351. Kane, “Why our Best Officers.”
352. Otis and Straver, *Review of Attrition and Retention*, i-66.
353. Gurney, “DND’s Army of Bureaucrats.”
354. Eric Beauchesne, “Federal Outsourcing Has Created a ‘Shadow Public Service,’” *The Vancouver Sun*, March 3, 2011, accessed March 4, 2011, <http://www.vancouversun.com/business/Federal+outsourcing+created+shadow+public+service/4378560/story.html> (content no longer available).
355. LGen Andrew Leslie, CF Chief of Transformation, quoted in Mercedes Stephenson, “Top General Fights to Cut the Fat in the Forces,” *Calgary Sun*, February 25, 2011, accessed July 28, 2014, <http://www.calgarysun.com/news/canada/2011/02/25/17415176.html>.
356. Gurney, “DND’s Army of Bureaucrats.”
357. Interview, Major, Army Logistics, February 8, 2011 and Major, Infantry, February 8, 2011. One must remember that civilian public servants are not subject to the family disruption caused by CF postings, cannot be ordered to deploy overseas or within Canada, and are not part of a strict hierarchy as CF personnel are. Public servants can refuse a posting; CF personnel cannot. Many CF personnel employed in mixed civilian/military employments view these postings as a necessary evil between operational employment, whether flying, at sea, or in the field, so are, from the outset, less motivated by them as they are generally not what CF members “join to do.”
358. Christopher Spearin, “Not a ‘Real State’?: Defence Privatization in Canada,” *International Journal* 60, no. 4 (Autumn, 2005): 1093, accessed July 28, 2014, <http://proquest.umi.com/pqdweb?did=971836891&Fmt=7&clientId=1711&RQT=309&VName=PQD>.
359. Peter W. Singer, “Outsourcing War,” Brookings Institution, (March/April 2005), accessed July 28, 2014, http://www.brookings.edu/articles/2005/0301usdepartmentofdefense_singer.aspx.
360. *Small Wars Journal* message board comment in response to Hsia, “Today’s Junior Army Officers.”
361. Smith, “The Military Profession in Australia,” 184–215. The author identifies this challenge in an Australian context. The CF is no different in this instance and faces many of the same challenges.

362. Interview, LGen W. Semianiw, Commander, Canada Command, also identifies that the decision to release is “made in a nanosecond” when the CF member actually signs his final release paperwork. Prior to that, there is always the chance that the CF could do something to change the individual’s mind and reverse the release decision.

363. Cosack, Guthridge, and Lawson, “Retaining Key Employees,” 3.

364. Allen, Bryant, and Vardaman, “Retaining Talent,” 48–64.

365. Personal email, Dr. Leonard Wong.

366. Interview, LGen W. Semianiw, Commander, Canada Command.

367. Raines and Arnsparger, “Millennials at Work.”

368. Allen, Bryant, and Vardaman, “Retaining Talent,” 48–64.

Chapter 5 – Arctic Sovereignty: Security in the North Through the Use of Advanced Technologies and Sustained Development of Northern Communities

Lieutenant-Colonel J. A. Rossell

Abstract

Canadian sovereignty over its Arctic region has been an issue ever since taking Confederation. To contend with these early challenges, the Canadian government sent explorers to the region and made attempts to aid the indigenous population in further expanding their occupation throughout the Arctic. Today, Canada is still faced with a small civilian population and a minor military presence in an area representing 40 per cent of Canada's entire land mass. As the concentration of the country's population resides in the south, it is crucial that methods and technologies are used in the Arctic that can ensure the continuous growth of the Far North, as well as ensure the protection of Canada's northern coast.

As harsh conditions in this remote area of the world have made development opportunities difficult and costly, Canada is continually assessing the benefits of improving the region against the threats posed on its security. In the past, where the threat exceeded Canada's ability to respond, it worked with other Arctic partners, such as the United States. These cooperative efforts, such as the creation of the Distance Early Warning (DEW) Line, ensured the protection of Canada while Canadian sovereignty remained intact.

As today's threats bring environmental, economic and social concerns to the Arctic, it is even more important to invest in surveillance, monitoring and enforcement technologies. Further added to this solution is the need for the indigenous people to be the main drivers in a security response. Community investment, infrastructure improvements and training these inhabitants in the operation and maintenance of the equipment and systems used in the Arctic must be done.

The Canadian government has proposed making a very serious investment in the protection and development of the Far North. Canada must now see beyond its internal commitments and work with its Arctic partners to invest in the latest technologies for the stability and protection of this pristine environment.

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*The True North strong and free!*¹

– “O Canada”

1. Introduction

As professed in its national anthem, Canada is a country where its citizens see its northern areas as strong and free from harm. Although this belief is popular, there are continually questions as to the extent Canada maintains its own sovereignty in the region. As the second largest (by area) country in the world, its population has historically been relatively small, with a military force that appears to be less than capable of meeting the commitment of protecting its borders.² This position is particularly evident in having to protect a territory that is surrounded by three oceans. Looking to Canada’s North and in particular its Arctic archipelago, this area is significantly vulnerable. With this reality, the Canadian government must look at innovative ways to protect its borders and maintain sovereignty. For past confrontations, northern development and the use of technology of the period have had an influence in meeting this principal need. To demonstrate that it is serious in establishing a presence in the North, Canada must grow its northern population, enhance local development and strengthen its military position. With new concerns over Canada’s ability to maintain a sovereign position in the Arctic, this paper will demonstrate that the use of globally available, technologically advanced systems—from both a military and the societal perspective—can ensure Canada’s presence in this region while minimizing our requirement to increase our Canadian Forces (CF) personnel commitments.

To adequately explore the sovereignty issues and look at successes in maintaining Arctic security, it is important to address the historical aspects and the current position of Canada’s North. The next section will outline the historical significance of the Arctic and the challenges Canada has faced in meeting its northern commitments. To fully comprehend and appreciate the uniqueness of maintaining Arctic sovereignty, it is important to look at Canada’s early beginnings. The historical significance of the Arctic will be examined, focusing on the ways the Canadian government effectively dealt with infringement on its claims to the North. There is an apparent abundance of natural resources and untapped potential throughout the Arctic that has been protected simply by the North’s harsh environment and ice-covered ocean. Some of these areas have been mined, but costs in pursuing this type of endeavour have been high, thus resulting in only temporary development. In these cases, the Canadian government responded by posting federal police to various locations to enforce Canadian laws and regulations.

In the not too distant future, as climate change takes effect and the ice continues to regress, more military, industrial and commercial activities will move into this area to exploit the Arctic’s riches. Thus, more questions on Canada’s ability to ensure sovereignty will surface, as Canadians review the government’s ability to be the “supreme legitimate authority within this territory.”³ This ultimate control specifically applies to Canada’s ability to both meet the challenges and expectations of the people living in the Arctic as well as being able to independently protect the region from “unwanted intervention by an outside authority.”⁴ The Canadian government must respond to avoid the sovereignty challenges that will likely ensue.

The outlook and use of various technologies has also played into curtailing other nations occupying or laying claim to this region. Historically, we have seen the influx of technology during World War II and into the Cold War. The conclusions reached on Canada’s security were greatly influenced by the creation of the DEW Line, the positioning of northern bases such as Alert and the use of

Canadian Coast Guard (CCG) icebreakers. Although these initiatives only covered small regions of the North, the presence of these and other assets can show that Canada was beginning to realize the importance of using the technology available during that era to enforce its sovereignty claims. Section 3 will take a closer look at the technology available and used in the past that helped to secure and protect the Canadian Arctic.

Beyond the militarization of the Arctic, Canada must lay claim in committing resources to the development and technological improvement of its northern communities. Much like Canada's early days and the challenges in developing its southern regions, it is important that the North is not forgotten, as is currently evident with the minimal investment in Inuit and other indigenous communities. Section 4 will show how the Canadian government has been negligent in the investment in northern communities. By providing northern residents with the same or similar comforts and advantages that are available to Canadians living in the south, growth and prosperity will undoubtedly happen. Given the cost of developing the North to that extent and the huge disparity in population density between communities in the Arctic compared to southern Canada, this may seem an unobtainable goal. However, attempts must be made to meet Canada's constitutional commitment of equality throughout the country. Furthermore, as communities spring up from the excavation of resources, Canada needs to use this opportunity to encourage Canadians to venture north to take advantage of these rich employment opportunities. To further enhance the permanency of these communities, modernization and the installation of advanced technologies need to be key components. Additionally, the government also needs to look at building educational facilities and research centres, followed by enticing businesses to invest in this region in order to improve the quality of life of current inhabitants and lure other Canadians and immigrants to these austere locations.

Taking a close look at other northern nations, Canada can leverage their solutions to provide a stable and secure environment from both community-development and technology-enhancement perspectives. Russia, Norway, Greenland (Denmark), Sweden, Finland and the United States (US) have established a significant presence in their Arctic environments. These countries have used both government and non-government initiatives to establish sovereignty in their respective regions. Section 5 will explore the challenges they have faced and the methods they employed to ensure their security. Canada can also take advantage of cooperative efforts by all Arctic nations, for the betterment of the entire region. It would appear that issues anywhere in the Arctic will have an impact on all Arctic nations, with a strong possibility of having global implications.

Finally, it is incumbent upon Canada to take advantage of technologies available today to support further growth. Canada must provide a setting that will remove doubt as to ownership of its north, without resorting to a significant and permanent military presence. In today's environment where the use and exploitation of the Arctic has become a great debate, Canada must look at innovative ways to address the security challenges it will likely face. From a diplomatic and international perspective, Ken Coates and his co-authors in *Arctic Front: Defending Canada in the Far North* state that under international law Canada's claims are solid. Noting that other than for a couple of minor exceptions such as Hans Island and some maritime zone boundaries, Canada's Arctic sovereignty is not in dispute.⁵ However, with the opening of the Northwest Passage, the prospect of huge oil and gas deposits as well as the opportunities to find other resources, international traffic will continue to grow. For Canada to control, regulate and secure its Arctic region, it needs to know about and act on unauthorized infringements into the country. Additionally, due to past and future prospects for Arctic development, exploration and exploitation, environmental and ecological issues have been raised. Section 6 will cover the proposed investments expected from the Canadian government to

meet these situations, and section 7 will explore other technology options to enhance security and promote Canadian sovereignty. A key component of this argument is the use of technology that will minimize the requirement for the build-up of military forces to protect Canadian interests. When the question of Canadian sovereignty has come up over the years, the main response in addressing the issue has been to focus on military options. Canadian history, and the history of other nations, has shown, however, that by establishing settlements and properly positioning technological assets, which can be both military and non-military, these concerns soon abate. With a huge country and a relatively small military, Canada must strive to pursue options that are more akin to our capabilities. Technological improvements and developments in existing communities, the use of technology for surveillance and protection, and bringing forth a more liveable atmosphere in the North will go a long way in solidifying Canada's claim to its Arctic sovereignty.

2. Historical significance of the Arctic

*The debate over Canada's Arctic claims and particularly the islands north of the Canadian mainland is by no means new.*⁶

– Maxwell Cohen, 1970

The early beginnings of Canada's Arctic

Canada's Far North has played many roles in defining the character of the country. Ever since its establishment as a self-governing Dominion in 1867, Canada has struggled to maintain a sovereign presence in the North. Throughout its history, there have been many explorers who have ventured into this region of Canada, forcing various attempts by the government to show its dedication to this northern frontier. The main technology Canada used during this time frame was ships to patrol and explore the Arctic, which was similar to other nations who were staking claim to this region. However, due to the harsh climate of the Arctic and the small and localized presence of its indigenous people, it was difficult for Canada to assert its position as the owner of this huge area. Fortunately, there was international acceptance of Canada's claim, and other countries were facing their own difficulties in populating this frigid wasteland. Although Canada had received transfer of ownership from the British, the fact remained that to continue to possess these lands, Canada had to demonstrate its ability to oversee and manage the region.⁷

Canada acknowledged its ownership internationally in 1895 by issuing an Order in Council that the islands north of 84 degrees latitude were the property of the Dominion of Canada. As stated above, to back up this declaration, Canada dispatched explorers to represent the nation. Starting in 1897, a number of expeditions were conducted where northern settlements were established that would maintain peace and order in various Arctic locations.⁸ As Canada was beginning to grow, the technological sophistication it possessed was predominately expressed through shipping. This type of technology tended to be the only form that Canada used to express its sovereignty in its early years of ownership. However, using these expeditions, Canada was able to set up government offices and services, thereby showing its willingness to inhabit and control these lands and waters.

Canada's early 20th-century commitments

The government over the years has realized its limitations in being able to protect this northern area and has implemented various military and non-military actions to show its intentions to protect the entire country. At the beginning of the 20th century, the limit of Canada's protection of the North was through patrols and voyages. A Canadian military presence was not established in the Far North

until after the turn of the century as Canada lacked a navy.⁹ Hence, the government sponsored expeditions and patrols that were prominent from 1897 until 1911, and the Northwest Mounted Police performed this sovereignty role.¹⁰ A significant point in Canadian Arctic history occurred from 1905 to 1909, when Captain J. E. Bernier conducted patrols throughout the Arctic, mapping and claiming sectors throughout the region. The culmination of his efforts was the erection of a monument on Melville Island, claiming the entire Arctic archipelago for the Dominion of Canada from longitude 60 degrees to 141 degrees west right up to the North Pole.¹¹

From a military perspective, it was not until the Klondike Gold Rush at the end of the 19th century—when a flood of foreign prospectors was staking out the Yukon—that Canada responded by sending a military/police force named the Yukon Field Force. But after this perceived threat to Canadian sovereignty had died down, the force departed, and Canada's military did not return until 1923. Upon their return, the Royal Canadian Corps of Signals showed the first signs of using technology to reach out to the Arctic by establishing a number of radio stations throughout the Northwest Territories and the Yukon.¹²

Most other attempts to demonstrate its northern sovereignty have been symbolic in nature, and even the use of the Royal Canadian Mounted Police (RCMP) could be seen in this way. Canada's use of explorers to send its message of ownership in the Arctic was well respected at that time. Although a number of nations including Britain, Denmark, Norway, US, France and Russia ventured into Canada's Arctic, treaties were in place that recognized the Canadian boundaries. As most of the area was unsettled, it did not guarantee that other nations would not send explorers to make their own claims, and they did. In fact, Canada's need to venture into the Arctic in the earlier 1900s was predicated on Norway staking claim to some of the lands. As Norway did not attempt to occupy or patrol these islands in a manner similar to Canada, it can be viewed that their claims to these lands ceased to exist. Denmark made similar claims to areas of the Arctic in 1918, and with their occupation of Greenland, there was a distinct possibility that their claims would be recognized. Once again, Canada's response to this threat was to send an expedition to Ellesmere Island, the area in dispute. As a one-time visit does not realize this claim, an RCMP outpost was established to patrol areas around this immediate region, and annual resupply patrols were also conducted.¹³ Unfortunately, these disputes did not get resolved quickly, and Norway did not recognize Canada's title until 1930. Similarly, the claims made by the US and Denmark against Canadian lands were no longer considered valid due to Canada's occupation of the Arctic.¹⁴

For the periods in Canada's history where natural resources were discovered and prospectors occupied these areas, Canada would establish small Northwest Police outposts. These outposts, once again, tended to only represent Canada's symbolic ownership of these lands. However, despite the fact that much of the Arctic is barren and uninhabited, Canadian ownership had not been disputed. In 1927, Canada was able to establish a stronger governance of the region with the deployment and stationing of six aircraft into the Hudson Strait area.¹⁵ As World War II (WWII) approached, further developments occurred, including the construction of the Alaska Highway and the Northwest Staging route.¹⁶ These initiatives created opportunities for Canada to advance its claims in the North and allowed for further development in the region. Additional advances were realized with the construction of the Canol pipeline in Norman Wells, a refinery in Whitehorse and a series of airbases along the Crimson Route, which continue to validate Canada's commitment to Arctic sovereignty and security.¹⁷ Overall, through efforts to enforce its laws in the Arctic—through occupation, exploration and governance—in the early part of the 20th century, Canada has validated its claims to the North.

Second World War and Cold War years

It was during the WWII years that the physical development of the North strengthened Canada's sovereignty claims. However, for Canada to afford a strong surveillance capability in the North, the Canadian government had to work with the US who had the most advanced technologies and could also afford to build them in this very inhospitable region of Canada.¹⁸ This joint cooperation was deemed essential for the protection of both nations from unfriendly incursions. Even though there have been questions regarding Canada's sovereignty under this arrangement, elements of this agreement spelled out the limits of US involvement and control in Canadian territory to ensure Canada's sovereign rights and unilateral security were upheld.¹⁹ It was at this point in time that Canada reacted in a manner that showed grave concern for a potential attack through its North.

Ottawa respected the fact that Inuit communities would be impacted from this northern development and tried to link the expansion with opportunities for employment and development for these communities. However, some changes were forced upon the inhabitants that, although seen by southern Canadians and government officials as necessary for sovereign occupation of the Arctic, were detrimental to the cultural and instinctive traits of the people who have lived in the Arctic for centuries. Moving Inuit into areas that were barren and undeveloped severely damaged the lives of these indigenous people. The Inuit found the conditions to be inadequate as settlements were underdeveloped and unsupportable. Even with the Inuit's great knowledge of the environmental conditions, they struggled to survive.²⁰

Other government departments also started to show an interest in Arctic development, and in 1943, the Department of Mines and Resources starting gathering information on the resource potential of this area. This department was instrumental in establishing a Territorial Roads programme where the construction of a railway up to Pine Point was undertaken. In order to encourage mining but maintain order in the Arctic, Canadian regulations and laws were introduced.²¹ The Far North was now being seen as an economic benefit to Canada, and it was essential that Canada showed regional governance.

The CF has also been very active in establishing a presence in the North. In the 1950s, Canada knew the Arctic was separating two military superpowers and, hence, joined with the US to construct the DEW Line that extended along Canada's northern land mass and just below the Arctic archipelago. With the creation of the DEW Line, other developments to this region also sprang up with airfields, landing sites and navigational aids being built, while more advanced charting of the Arctic was being conducted. In 1948, Canada saw a further need to patrol the Arctic but needed an icebreaking vessel to accomplish this sovereignty mission. This requirement led to the Canadian Navy's commissioning of Her Majesty's Canadian Ship (HMCS) LABRADOR in the 1950s. This vessel was more than capable of meeting the demands of this harsh climate.²²

During the 1970s, there was a refocus on Arctic security. Firstly, Canada needed to be able to respond to military incursions, whether peaceful or not, by other nations into its territory. These incursions could be in the form of overflights, submarines and/or warships entering Canada without authority. A second issue related to Canada's response to an ecological or social instability within the Arctic. Finally, Canada needed a capability to respond to commercial vessels or unauthorized foreign individuals entering the region. The creation and formation of the Canadian Forces Northern Region Headquarters—based in Yellowknife—was one response to dealing with these situations.²³ During this period, military funding as a whole was limited. Thus northern development suffered greatly as new equipment for surveillance and monitoring in the region were not being acquired to replace existing equipment that was becoming obsolete.²⁴

Although the threats to Canada's security during the Cold War years tended to point towards the Union of Soviet Socialist Republics (USSR), the fact that the environment was being threatened by pollutants was becoming a more prominent concern starting in the 1970s. This issue was front and centre on Canada's radar after experiencing the unauthorized voyage of a US cargo ship, the *Manhattan*, through Canada's Northwest Passage. This intrusion not only raised sovereignty questions but also questioned how Canada could respond to an ecological, maritime or search-and-rescue (SAR) disaster in this most dangerous waterway. Northern residents were particularly sensitive to these threats, and in 1977, they founded the Inuit Circumpolar Conference (ICC). The ICC was key to bringing together all Inuit communities living in different Arctic nations. The sharing of the Arctic region allowed them to collectively address common issues such as "land rights, human rights and environmental protection"²⁵ Their common goal of this union was to "foster international cooperation in a strategic war zone, to develop and advocate a pan-Arctic strategy ..."²⁶ The indigenous people—numbering some 155,000 from Greenland, Canada, Alaska and Russia—see a collective responsibility to their surroundings and expect to have a voice in the Arctic developmental affairs.²⁷ For economic development and evolution of technology within the region to be successful, cooperation and support are needed from the inhabitants that are most likely affected by changes to the Arctic.

Fallout from Canada's position of enforcing some control in its northern territorial waters was the adoption of Canada's Arctic Pollution Act. This act was intended to enforce control over all commercial vessels that entered any waters within the Arctic that are considered internal waters to Canada.²⁸ Then, in the 1980s, Canada used the United Nations (UN) Convention on the Law of the Sea for reinforcing claims on its sovereign Arctic waters and implementing laws and regulations to protect its northern waters.

Post-Cold War

By the late 1980s, the Canadian government showed commitment to Arctic security by announcing an upgrade to its northern airfields in order to allow for the CF18s to be stationed there. However with the security threat diminishing after the end of the Cold War as well as with a change in government, the necessity to further increase military presence in the North was withdrawn, and attention now shifted to environmental and domestic issues.²⁹

The Inuit communities have expressed their dissatisfaction with the lack of attention given to the development of their communities and the welfare of the environment if the Arctic becomes a plethora of activity as a result of the effects which climate change is having on this region. Besides the development and security issues facing the Canadian government, "land claims settlements, aboriginal self-government, improvements to regional infrastructure, stabilization of northern communities, long-term economic development, protection of the vulnerable Arctic environment, and scientific research"³⁰ are all considered areas that must be dealt with to ensure sovereignty and Canada's commitment to the North.

Linked to the Inuit's concerns, in the 1990s and into the 21st century, Canada has seen its Arctic ice receding and its northern territorial waters opening up to international traffic. A major international debate is now brewing to define the Northwest Passage as either internal waters to Canada or an international strait. This situation will most likely be resolved diplomatically, but until such time as a decision is made, Canada is reinforcing its position through governance of these waters and initiatives to increase its awareness of the activities in the region.

Prime Minister Harper has recently professed that Canada must "use it or lose it"³¹; signifying the government's commitment to find ways of exploring different options to keep our entire country intact.

However, this statement would appear to be somewhat overstated, as throughout Canada's history, it has "used" the Arctic as best it could. The simple fact that there are Canadian citizens living in various locations throughout the Arctic, as sparse as it might be, is a testament to Canada's ability to occupy the North. One must look at the isolation factor and determine what must be done to best improve conditions so that further habitation is possible and desirable in the most remote areas.

3. Historical effects of technology

There have been plenty of instances in Canada's history where technologies have been introduced within the Arctic region for protection, monitoring and development which, ultimately, were a reaction to the notion of upholding Canadian Arctic security and sovereignty. Canada has positioned many technical systems in the North, most notably for air defence; radar; surveillance; and monitoring for and use by submarines, satellites, aircraft/airfields, shipping, railroads/road and civilian-facility development (including scientific research). As will be presented in this section, there have been instances in Canada's history where it has not gone far enough to sustain or improve on the technology it has placed in the Arctic, resulting in stagnated economic development and minimal security coverage for the region.³² Hence, the long-standing question for the Canadian government has been, "what level of security is truly required?" Since 1968, Canada has been recognized internationally as the legal owner to the Arctic lands that have been claimed in its name.³³ With this being the case, the military and non-military commitments that Canada has made in the Arctic may be enough, validating the past use of technology to support Canada's northern sovereignty obligations.

Air-defence assets

The most notable of Canada's technological developments in the Arctic has been the creation of air-defence (AD) and radar stations. With a perceived Russian threat to the security of North America with the detonation of their first atomic bomb in 1949, Canada needed to respond with at least a capability to detect intrusions into its northern territory.³⁴ In a joint US/Canada venture in 1951, the Pinetree Line was created, followed by the Mid-Canada and DEW lines in 1954 and 1955 respectively.³⁵ Although Canadians accepted these stations to be in the best interest of Canadian security, many questioned that with the US paying for a great deal of this project, whether Canadian sovereignty was being jeopardized. On this issue, Canada made sure that concessions were made that secured Canada's sovereignty of the Arctic, by having Canadian firms and indigenous people responsible for its construction.³⁶ These series of DEW as well as the Mid-Canada and Pinetree sites were also connected with other allied nations' radar systems to further detect intrusions and supplement the coverage for Canada's protection.³⁷ These AD assets brought Canada and the US together to form the North American Air Defence (NORAD) agreement that recognized the contributions made by both countries for the security of the continent.³⁸

Canada was very selective in the technology that it wished to introduce to the country and maintained a firm position to uphold this security through joint agreements, such as those through the NORAD agreement. Although ballistic missiles were becoming more of a concern to NORAD beginning in the 1950s, Canada's northern defence commitments remained with monitoring the northern skies and manning its northern radar sites. These AD lines were not capable of detecting a ballistic missile, but the fact that the US systems would be monitoring Russian missiles, which would be aimed at either Canada or the US, allowed for NORAD to be prepared and react.

Thus Canada continued to manage the DEW Line by upgrading the capability to more effectively detect and monitor Russian bomber intrusions coming from the north. The incorporation

of these modern advances began in 1962 when the number of DEW Line stations reduced from 70 to 31, the Mid-Canada Line was abandoned and the Pinetree Line sites were substantially reduced.³⁹ As technology progressed, coverage and reliability of these sites improved, while at the same time the manpower to run these sites was greatly reduced. Finally, in the government's 1990 budget, there was an end to the DEW Line, as the Cold War was now over.⁴⁰ The North Warning System has now taken on Canada's AD role and is located in Canada's northern region. It is a prominent element of the security and protection of sovereignty for Canada.⁴¹ As Canada has seen with the recent Russian incursions into its Arctic regions, as long as an effective AD system is in place to monitor aircraft entering the Canadian Arctic, Canadian sovereignty can be maintained.

Radar and surveillance systems

Although the AD lines constructed in the Arctic were an expensive venture, the Canadian government would not have been able to afford this capability without joint cooperation with the US. During this period, Canada was reluctant to spend a great deal of money on other surveillance and radar systems, due to competing priorities for the government's limited budget.⁴² However, in more recent times, Canada has been reviewing its ability to adequately monitor and protect its Arctic region.

As articulated by the Library of Parliament report on Canadian Arctic sovereignty, there is grave concern that Canada is unable to adequately monitor its most northern region. There is yet greater doubt that even if Canada possessed adequate surveillance that they would be able to enforce its sovereignty claims.⁴³ This belief is brought about by the complexity of dealing with a region with the size and remoteness of the Arctic and the difficulties associated with establishing the necessary infrastructure to deal with the type of surveillance required for the expected traffic predicted for the North. This position can be disputed, as a number of projects have been enacted by NORAD or are in the process of being completed. The Northern Warning System will monitor Canada's Arctic, and Project Polar Epsilon, once completed in 2011, will add to Canada's surveillance ability. Canada's northern region will now have an "all weather, day/night surface observation capability for its northern region."⁴⁴ Assisting Project Polar Epsilon's ground stations is Radar Satellite – 2 (RADARSAT-2), a commercially owned, remote-sensing satellite system that will provide imagery that the CF will be able to use to support its military operations.⁴⁵ The entire system is expected to be online for Arctic monitoring sometime in 2011, where it will provide enhanced satellite coverage for monitoring activity in the Arctic. Polar Epsilon will greatly enhance Canada's surveillance capabilities for the entire country; however, short-falls of this system do exist in its inability to detect ballistic missiles or track small vessels or individuals.⁴⁶ Canada does have other means to provide surveillance, such as long-range patrol aircraft, ships and Land operations, but limitations on where and when they can be used in the Arctic have an impact on meeting Canada's commitments to protect its sovereignty.⁴⁷

Maritime technology

Canada has always struggled with providing the systems to monitor and intercept maritime incursions into its Arctic waters. It is well known that French, British, Russian and American submarines have transited through Canada's Arctic territory without authority, due to the fact that Canada does not possess an underwater surveillance capability to detect them.⁴⁸ There have been times in Canada's history where the government toyed with the idea of purchasing its own nuclear-powered submarines and/or acquiring fixed sonar-detection systems for the floor bed of its Arctic passages. The proposed purchase of nuclear-powered submarines was a very contentious item within the 1987 White Paper, and weighing the cost against the benefit gained by their purchase resulted in the government rethinking and changing its position.⁴⁹ Along with the submarine recommendation, the White Paper

also identified the need for modern icebreakers. The CCG is the only current Canadian agency with any icebreaking capability. However, with their limited fleet of only five icebreakers (that are also responsible for patrolling off the Atlantic coast), it has been difficult for them to maintain constant surveillance of the Arctic.⁵⁰ The Harper Government has plans for the North that include the purchase of new icebreakers. These plans will not be discussed here, but rather, section 6 will elaborate on the government's intentions for this new purchase. Needless to say, there is still a great deal of heavy ice in the Arctic surrounding Canada's archipelago for which its current complement of CCG icebreakers cannot pass through. One assessment made by Coates is that "Canada's aging fleet ... has become a national embarrassment, leaving the country as the only Arctic nation without the capacity to work properly in the region."⁵¹ Even before this assessment was made, similar assessments were being made of Canada's weakness in dealing with Arctic operations. Canada has made a few maritime voyages to show that it could conduct naval surveillance in the Arctic waters; however, due to limited Arctic-capable resources, these vessels could only extend so far into the ice-covered regions.⁵² Essentially, the Canadian military is faced with limited operability in its most northern waters.

Arctic airfields and surveillance aircraft for the North

Canada established small airstrips during the mid-20th century and has performed aerial surveillance of the North on numerous occasions. At the time of the Mackenzie pipeline and Alaska Highway construction projects, Canada and the US were also cooperating on the construction of various airfields in their northern regions.⁵³ A number of communities—albeit relatively small with population numbers only as high as a few hundred residents—were established around these developments. Other government initiatives to upgrade Canada's airfields came about in the late 1980s. With the purchase of the CF18 long-range fighter aircraft during the same time frame, the need to enhance the airstrips to support CF18 northern sovereignty flights became necessary, and the improvements to five northern airfields became a defence initiative.⁵⁴ The CF18 provided a greater capability and range than its predecessors the CF101 and CF104, by permitting a capability to stretch its sovereignty and security umbrella a great deal farther north.⁵⁵ It was during this time in history that fighters became an essential part of Canada's contribution to NORAD security and a vital component to counter Russian bomber intrusions into the Canadian Arctic.⁵⁶

Northern bases

The Canadian Forces Northern Area (CFNA) Headquarters (HQ), based in Yellowknife, Northwest Territories (NWT), is responsible for ensuring sovereignty operations are conducted within the Arctic environment. These sovereignty operations are conducted by Land forces (Canadian Rangers play a pivotal role) and Air Force assets (Aurora and Hercules aircraft, operating out of more southerly Canadian bases, perform surveillance patrols).⁵⁷

The contributions that are made, however, have not received favourable reviews from the media. An October 2007 media report from the *Globe and Mail* assessed our Arctic military capability and presence as meagre. Their report indicated that the only presence the military has on a full-time basis is a small base at Resolute, a small camp for Junior Canadian Rangers and cadets in Whitehorse as well as the CFNA HQ in Yellowknife.⁵⁸ These minimal military commitments to the North, combined with only a few RCMP stations that are also sparsely manned, are all that is reported to the general public. The fact that Canada has a dedicated and hard-working group of Canadian Rangers in a number of Arctic communities has gone somewhat unnoticed.⁵⁹ Additionally, Canadian Forces Station Alert, Canada's most northern military base on the northern tip of Ellesmere Island, has been in existence since 1958.⁶⁰

Railroads/road and civilian-facility development

Canada faced a number of challenges in the late 19th century as a new country trying to hold itself together. The Canadian government had to make decisions based on priorities and affordability. When it came to uniting the provinces from east to west, mostly driven by the threat that the US might subsume the western provinces, the Canadian government approved the construction of a railway system that extended across the country.⁶¹ This development not only allowed a linkage to all provincial regions but also transformed these individual territories into equal partners within the Dominion. With the vast, isolated and ice-covered terrain in the northern territories and the Arctic, combined with the absence of a similar threat to its occupation, a rail and road system comparable to that of Canada's south has not been constructed.⁶² However, one might look to the Mackenzie Valley pipeline and the Alaska Highway for evidence that developments of this magnitude can be accomplished in these extreme northern regions.⁶³ The capability does exist, but there needs to be a desire and adequate government funding at the national and territorial levels for these developments to occur. With the existence of military infrastructure and the ability to build military settlements in the Arctic, it is strongly believed that civilian infrastructure development can leverage from these successes to build and operate similar facilities for civilian communities.⁶⁴

Somewhat between civilian and military development is the capability for scientific research and associated developments. In the midst of military stations being placed in the Arctic, the 1950s also saw a small number of weather stations and other scientific research centres established.⁶⁵ Continued progress in this area is needed for the North to prosper.

Over the years Canada has positioned and used various technologies to show the Canadian flag and convince its citizens that Canada's sovereignty and security were not in jeopardy. The construction of AD assets in the early 1950s and the continual technological upgrades to this system in support of NORAD showed commitment to its role of monitoring the North American Cold War threat. Air, maritime and space assets have also contributed to Canada's surveillance systems in the North. The development of bases and other military infrastructure has shown that Canada is using the Arctic. While civilian communities have experienced minimal improvements, many of the developments were the result of foreigners setting up communities while they exploited the Arctic's resources. However, in all fairness, the Canadian government has also provided some funding for community development and improvements.

4. Technology to promote population growth

Historically, Canada has done very little to promote expansion of its most northern regions when it comes to development of its cities and towns. Furthermore, the federal government has not put forth the necessary funds to provide its northern population with some of the commercially available technological advantages that are prominent throughout the southern parts of the country. This section will explore the initiatives that the government has undertaken in the past and its future plans of enhancing the level of technology for the Arctic peoples. The predominant areas that will be addressed include government investment, infrastructure, education opportunities, environmental considerations and economic/social development. Finally, the creation of the Arctic Council in 1996 has greatly influenced some decisions being made within this region and has given a voice to the Inuit populations of all nations sharing the Arctic. This cooperative effort will be explored to show the tremendous opportunities that exist that can enable the sharing of technologies and knowledge for the betterment of the entire region and, hence, can create a more stable environment for Canada's Arctic.

Government investment in northern communities

In the early 20th century, Canada took modest steps in its colonization of the North and the provision of modern technologies to the Inuit communities. The first noted advancement for the North was the placement of a radio system to support the NWT and Yukon, followed by some military communication and infrastructure projects that contributed to the first Canadian garrison town: Whitehorse. Besides the slow advancement of communities surrounding Whitehorse and Yellowknife, other communities within Canada's northern territories did not see an influx of government investment. The 1970s appeared to hold more promise for Arctic development, with the Canadian government indicating that there would be some major projects for the region that would improve the quality of life for its residents and promote economic prosperity and growth, while ensuring sovereignty and the security of the North. However, as the government's attention was drawn to other issues in the country and new security and sovereignty threats were not apparent, any significant investments dwindled.⁶⁶ Even today, the only significant challenges to Canadian sovereignty lie in the protection from commercial shipping and the unauthorized, yet peaceful, use of the Northwest Passage.⁶⁷

When Canadians, particularly from the south, look at improvements necessary for advancement, they look to traditional, Western-world solutions for economic development. Some of the failures experienced with bringing progress to the Arctic, and the Inuit people, centred on employment opportunities that involved obtaining a wage. Historically, Inuit people lived off the land, and the trade from hunting and fishing was a way of life for them. As the mineral mining and other extraction projects became more prevalent in the Arctic, natives of the North were presented with these changes in employment and the programmes endorsed by the federal government.⁶⁸ Opportunities for northern development also brought about challenges on the political front. As northern residents were not included as one of the two original founding members of Canada, being neither French nor English, they did not have a say in the political decisions being made for the Arctic.⁶⁹ Although the Arctic is comprised of small communities, it is essential that this element of the North be taken care of. The maintenance of this population can be a great asset in managing the other priorities of this region, including climate change, sustainable development, increased maritime and air traffic as well as the continual interest of other nations in this virtually untapped environment.⁷⁰

As the federal government addressed the needs of the Arctic, when it came to the needs of the people, there were three main goals that were emphasized. The need for a better standard of living for the Inuit and northern residents, the furtherance of economic-development projects and the promotion of a sustainable and growing environment were always at the forefront of both government and local concerns. As seen by the investments made to Pangnirtung's harbour, some government initiatives were realized and viewed by Arctic residents as a first step towards future similar projects for other northern communities.⁷¹ The federal government, in its current Aboriginal action plan, went further in defining an approach for healthier communities, through active discussions with northern Aboriginal leaders.⁷²

As other nations attempt to use Canada's northern islands and waterways, Canada must take a stand to protect its interests and the interests of its northern communities. There have been past incursions into Canada's North, and there are expectations that as the region continues to open up with the regression of ice from its currently protected waterways such as the Northwest Passage, American, European and Asian ships may take liberties in transiting through the Canadian Arctic. It is unlikely that Canada will take an aggressive stance against these nations as it did during a 1994 fishing controversy between Canada and Spain, where the CCG seized Spanish ships that did not

adhere to Canadian law.⁷³ Most likely, diplomatic measures and international law will address some of the disputes, but in the meantime, Canada must maintain a presence in these contested regions which can be addressed through a level of surveillance and enforcement. Other measures for enhancing the capabilities of existing communities can also substantially bolster Canada's claims and its ability to enforce its laws and regulations.

The Canadian government has been contending with how best to respond to northern development for decades. The major issues that have presented themselves are adequate subsidies for managing the territorial government priorities, settling outstanding land claims and, thus, implementing settlements with the Inuit. The federal government must recognize regional Aboriginal self-government and give these northern territories provincial status so that they can have the same entitlements and obligations as the rest of Canada.⁷⁴ In order for the Canadian government to see this through, they must show the rest of Canada that the investments being made in the Arctic override certain other priorities that southern Canadians have stressed. Canadians need to “connect with the North,” and show a keen interest in the northern affairs and not simply see the North as an area that is susceptible to intrusion by foreign vessels, commercial investment and the military forces of other nations. The Canadian government needs to encourage Canadians to visit our Arctic region, and through tourist visits, student and company personnel exchanges, and well-articulated media promotions, Canadians can gain an appreciation of the sheer magnitude of investment necessary to meet the challenges of community improvement and economic development in this harsh region of Canada.⁷⁵ These initiatives will go far in meeting one of the Canadian government's key objections of “promoting the human security of northerners and the sustainable development of the Arctic.”⁷⁶

Back in 1997, the Canadian government published a report entitled “The Northern Dimension of Canada's Foreign Policy.” In this report, the main objectives were for the federal government “to enhance the security and prosperity of Canadians ...; to assert and ensure the preservation of Canada's sovereignty in the North; to establish the Circumpolar region as a vibrant geopolitical entity ...; and to promote the human security of northerners and the sustainable development of the Arctic.”⁷⁷ These objectives were viewed as part of a domestic and international plan for Arctic security and protection. A follow-on domestic agreement, signed in 2007, was another step towards asserting Canadian sovereignty over its proclaimed Arctic waters. The elements required for this region must now be put in place to deal with increased shipping, SAR and environmental clean-up from existing contamination or future emergency response.⁷⁸ Evolving from this set of objectives, Franklyn Griffiths cites within his paper, “Towards a Canadian Arctic Strategy,” a list of deliverables necessary for success by federal-government departments. Most notably, Department of Foreign Affairs and International Trade (DFAIT) needs to take charge and ensure that there is Canadian representation within international forums, that Canadians are aware of the risks and opportunities that exist for the Arctic internationally, and that the Prime Minister is advised on the importance of Canada's place as chairperson of the Arctic Council in 2013. The establishment of the Marine Council will also go far in setting the stage internationally for Arctic research and development.⁷⁹

Finally, Canada has seen other nations, such as Russia, take an active interest in the Arctic. With Russia also seeing the benefits of security, resource exploration, scientific research and other peaceful endeavours, our federal and northern governments can unite with their Arctic neighbours and benefit from the knowledge of all Arctic people.⁸⁰ One just has to look back at history to see that this position of mutual support is not new. As Maxwell Cohen also concluded in 1970, “a major Canadian partner can be the Soviet Union, certainly on the scientific side and in due course in several other areas of common developmental and jurisdictional interests.”⁸¹

Infrastructure

A key component of modernization and the development of any region is infrastructure improvements. The US took the lead on much of the initial development in the Arctic, with the Alaska Highway, roads from Mackenzie Valley down to northern Alberta, the Canol pipeline and other infrastructure programmes dominating their northern vision during the WWII. Although most of these initiatives were part of the American war effort against the Japanese, the technology that was used also benefitted prospectors who were tapping the northern region for resources. In the early 1950s, there was little known of the Arctic residents, as there were many barriers with communication, technology and geography that minimized contact with southern Canada. Albeit, there was a great deal to be gained economically through resource exploitation that spurred a desire to quickly improve on the infrastructure conditions that were virtually non-existent in the Arctic.⁸²

The Arctic, and in particular Inuit communities, saw a very gradual introduction of European and southern infrastructure investment. Western-world influences saw the need to put the indigenous population in permanent housing and provide education and health care—seen by other parts of Canada as a right for all its citizens.⁸³ The creation of housing developments and other social programmes, intended to create opportunities for the indigenous populations, saw the Inuit people's lives affected greatly with little local input into these changes.⁸⁴

By 1960, the landscape of the Inuit communities had changed greatly. The Inuit now lived in somewhat developed communities and were expected to attend schools. Infrastructure was poorly designed and built, with roads, facilities and homes not meeting the standards for northern living conditions. Schooling was now a way of life for the Inuit, and new technologies for hunting and fishing became a dependency for survival. The communities were split, with children being separated from their families to attend schools that were great distances from their homes. Additionally, the Inuit were being drawn out of their traditional ways of life and introduced to technologies such as snowmobiles and rifles for hunting, fishing and general living in the North.⁸⁵ Although technology was creeping into these northern communities, the services they were provided were far less than what is expected by the average Canadian living in the south.

By the 1970s, other forms of infrastructure were being introduced to the high north. With resource exploration, evolving from the oil and natural gas discoveries, a number of transportation construction projects came online. As future prospects were deemed to be a windfall for the Arctic, expectations were that a flood of inhabitants would venture to the high north.⁸⁶ Other modes of transportation to the high north brought promise of roads and rail systems from “Tuktoyuktuk to Siberia.” Further developments included airports and harbours throughout the North, that would connect all communities to create growth and economic prosperity while enhancing security and sovereignty in the remote reaches of Canada.⁸⁷ These visions were seen to be very obtainable, as military infrastructure was already positioned in the Arctic, from which civilian infrastructure could leverage its development.⁸⁸ As well, roads, like the Alaska Highway, showed how non-military projects were also achievable with the necessary incentives providing the reasons for their construction.⁸⁹ When Canada was growing and needed to connect its eastern and western provinces, transportation networks and infrastructure developments were established regardless of the cost.⁹⁰ The same needs to be done for our northern reaches.

The changes to the Arctic were not necessarily seen as being in the best interests of its inhabitants, and many of these improvements were not to the same standard as expected by all Canadians. The government must look to building large northern cities, which possess the same social and economic infrastructures that match other cities within the Arctic region. One can look to Fairbanks,

Alaska; Alta, Norway; or Akureyri, Iceland, to see that even Canada's most developed northern cities of Yellowknife or Whitehorse pale by comparison.⁹¹ Our northern cities possess the potential for growth but need strong, long-term commitments from the federal government and southern investors in order to become prosperous.

Canada needs to make the Arctic attractive to promote and foster population growth. Luring investors, immigrants and southern Canadians to move north based on receiving a high wage does not encourage population growth. The federal and territorial governments need to seriously address the lacking social and infrastructure standards of the Arctic communities. The fact that housing falls far short of expectations is unsatisfactory. There needs to be a formulated approach to addressing the shortfalls in the use of today's technology for matching the needs of adequate housing. Furthermore, as many of the developments within Arctic communities are done using government funding, there tends to be a lack of attachment and pride that comes with ownership in having to work to obtain your property and, thus, taking care of it. The needs and values of the Canadian Inuit need to be part of the social and economic solutions for Arctic communities.

According to Coates and his co-authors there are two main issues affecting the growth in the Arctic: capacity building and migration. The infrastructure in the Arctic is in such poor condition that migrants to the area tend to be only temporary residents. Hence, governments need to invest in their northern settlements, and commercial organizations must be held accountable to provide the services that would be expected in any part of the country.⁹² To accomplish this, leadership needs to be demonstrated both within government and commercial circles to ensure systems are put in place that will meet the expectations of their residents. A journal article by Peter Jull suggests that Canada's Arctic sovereignty issues can be effectively dealt with by instilling the "infrastructure of nationhood within our own territory and extending political institutions to aboriginal Canadians."⁹³ This logic will allow for governments and the local populations to work at coming together to formulate a permanent solution to the problems of Arctic infrastructure.

Future Arctic infrastructure investment must equate to Prime Minister Harper's recent announcements on his government's Pacific Gateway initiatives for the western provinces.⁹⁴ Similar infrastructure projects are warranted for the Arctic. An example of a simple investment is constructing facilities to generate wind-turbine energy. This initiative could be viewed as both looking to the electricity requirements for the communities while addressing the environment in the region.⁹⁵

A necessary component to any infrastructure commitment is for the residents to provide their input. Premier Handley, Premier of the NWT, has used occasions with the Prime Minister to lobby the concerns of his constituents. Premier Handley views infrastructure development as a cornerstone for growth and security in the North, and although the federal government's intentions are for more military development in the Arctic, community investment must also be seen as a priority for meeting security and sovereignty objectives.⁹⁶

Education opportunities

Adequate education on the Arctic and for the Arctic people is severely wanting, particularly at the higher institutional levels. Therefore, the University of the Arctic was created to be an essential element for northern communities to subscribe to the benefits of higher learners. It is a "cooperative network of universities, colleges, and other organizations committed to higher education and research in the North."⁹⁷ Canada can leverage other partnerships that subscribe to the University of the Arctic philosophy and build from the research capacity that already exists. Additionally, Canada needs to have a university located at one of its major Arctic communities. The focus of the northern university can be

to sponsor graduate-level programmes on the relevant issues pertaining the conditions of the Arctic.⁹⁸ The investment in higher education can have very positive effects within communities, as graduates tend to be able to get better jobs and the community benefits from a greater social environment for its residents.⁹⁹ However, as already expressed with the cooperation among circumpolar nations, education can be a collaborative effort by taking advantage of the already existent programmes of the University of the Arctic.¹⁰⁰ Within Canada, the University of Northern British Columbia and the University of Alberta are already making attempts to introduce programmes that relate to the Arctic and, in particular, to issues affecting climate change.¹⁰¹ These commitments need to be looked at as a starting point for Arctic education and not Canada's sole investment in Arctic university studies.

The University of the Arctic has taken steps to conduct further study in scientific research and socio-economic development in the Arctic. These investments will further explore technologies that are beneficial to northern communities and protective of the environment.¹⁰² Other research and studies are also focused on mapping the Arctic continental shelf. Canada's commitment to this programme is substantial, but if Canada worked cooperatively with other Arctic nations, it could go much farther in advancing its comprehension of this area. Canada would see benefits with both their natural- and human-science knowledge of the Arctic. These advantages can only be better achieved through collaborative efforts from governments, the research sector and other key parties within the private sector.¹⁰³

Environmental considerations

For environmental plans to be successful in the Arctic there needs to be a global plan that will offset the challenges that will be faced by resource exploration and economic development.¹⁰⁴ For centuries, the Inuit have lived within these "unspoiled" regions of the world, which once industrialized will see a tremendous change to their way of life. Hence, it is incumbent for the Canadian government to take a position to protect its northern citizens as per its constitution, respect the well-being of its Inuit communities and conserve this natural environment. As the Arctic ice recedes, there will be a greater number of shipping vessels that will want to transit through the Canadian Arctic. The effects of marine pollution and the negative impact on the Inuit communities must be minimized through control measures taken by the Canadian government.¹⁰⁵ Ultimately, the environmental concerns in the Arctic are global in nature, but at the same time, any security concerns for Canada must be linked to the environmental and human impact on the region.¹⁰⁶

Economic/social development

For most of the 20th century the Arctic posed significant challenges to anyone expecting to reveal its riches; its harsh climate, the technological inefficiencies and the high cost of establishing bases for resource development were formidable opposition to such exploration. However when resources were found, there was a sudden rush to the region, and the extremes associated with economic development and social unrest would present themselves.¹⁰⁷ With this influx of a mostly male population, there were grave concerns as to the impact upon the indigenous societies: with expectations that the Inuit would take on the burden of providing the workforce and being the guides to many of the civilian, military and law-enforcement personnel that would occupy their lands.¹⁰⁸

One of the most unpleasant times in Canada's Arctic history relates to the relocation of some Inuit peoples to less populated areas of the Arctic in reaction to the Canadian government's sovereignty concerns. As the federal government had not conducted studies on the effects of such relocations, this poorly planned venture resulted in many hardships and social dilemmas for the Inuit.¹⁰⁹ As southern views crept northward for the improvement of economic and social conditions

for the Inuit, initiatives such as structured schooling were introduced. The difficulty with these initiatives was that Inuit children were taken away from their communities and grouped with other children from different regions of the Arctic so that they could be dealt with in large numbers. By the 1970s, as these youth became adults, they began to rebel against the historical and traditional beliefs of the Inuit. Their defiance against community values and dependency on federal-government handouts created a great many social problems within the communities.¹¹⁰ One avenue to counteract these social concerns was for the governments to invest in infrastructure programmes to improve the economic and social climates within these communities.¹¹¹ Although social conditions are still poor, government departments have been more involved with improving the living conditions for the Inuit with support from both within and outside Inuit communities. As history has shown, both military and civil authorities can play a role in establishing a more stable and socially acceptable environment for these northern communities.¹¹²

Arctic communities have historically been deprived of political benefits and the extent of services provided to all Canadians primarily because of the cost associated with meeting the needs of a small isolated population. Investments must be made so that all Canadians can receive the services, employment opportunities and political attention that all citizens expect. In order to properly address the necessary balance of services for this region, its local leaders and citizens need to be the planners and voice for the Arctic. With the most remote locations now being exploited and in many ways affecting the lives of its northern inhabitants, it is only sensible that local inhabitants make the decisions for their region, with the federal government's assistance.¹¹³

Canada is not the only northern nation that is dealing with socio-economic issues in the Arctic. For issues that other circumpolar countries have in common with Canada (such as economic development, wildlife management, social problems—including alcohol and family abuse—and the problems associated with managing small isolated communities), all nations can join together to overcome their difficulties and prosper by coming up with common solutions. The Canadian government must step back on many of these issues and allow local organizations and the territorial governments to take charge of their own needs and economies. The federal government needs to be supportive, as it is with the provincial governments, and provide the necessary support for the benefit of both the territory and the nation.¹¹⁴

Over the past few decades, a number of resource-development initiatives have presented themselves. With these opportunities, there have also been major disputes between non-native businesses and indigenous peoples within the affected regions of the high north. The primary interests of these parties have been over the control and level of economic and political development that should be occurring in the Arctic. These issues are now becoming more prevalent due to the local populace having a greater say in the affairs of the North, which is strikingly different than how the federal government handled issues in the North less than half a century ago.¹¹⁵ With the federal government allowing the local leaders to represent their populace and make important decisions for the Arctic, it greatly improves the societal aspects within their communities. People are now empowered to control their own lives and make decisions for their communities, thus allowing their futures to be controlled in a manner that they can call their own instead of one that is dictated to them.¹¹⁶

Canada has gone far by signing the Nunavut land claims agreement¹¹⁷ in 1993, followed in 1999 by recognizing Nunavut as a separate territory with the right to Inuit self-government. With a population of just over 45,000 in the entire Canadian Arctic, the Inuit have to look outside of their small communities if they wish to grow and become “self-supporting people.”¹¹⁸ As has been proven

just a few years after recognizing Nunavut, the territorial government has taken the necessary steps to becoming a coherent political entity, ready to work towards realizing both domestic and international goals that will involve the Inuit people at the forefront of the decision making. The Inuit people are concerned not only with the benefits associated with economic development but also with the social impact that must be anticipated and planned for in order to avoid the negative effects that could surface within their region. Circumstances in the Arctic have rapidly and dramatically affected the local population, with the Inuit taking on a leadership role to deal with their concerns. The image the Inuit now cast is much different than how the outside world saw them in the past.¹¹⁹ Outsiders to these northern communities saw a very secluded people without knowledge of the outside world. But with the challenges facing the Arctic, the Inuit have shown through their attitudes and actions that they are capable of meeting these demands head on.¹²⁰ From the onset, the positions and intentions of the Arctic people have always been to address their welfare and environment, which they have taken an active stance to protect and enhance.¹²¹

The Canadian government continues to show its commitment of allowing the Inuit communities to benefit from the resources within their territory in order to deal directly with their issues and implement programmes that they deem appropriate. As the federal government's 2007 Throne Speech professed, the government is cognizant of the socio-economic and environmental issues within the Arctic and a long-term plan will be required to adequately address future intentions in the region. The three territorial leaders understand the challenges and look to claim and use the revenue generated through resource development to deal with the social concerns prevalent in many communities throughout their respective territories. Other areas where both federal and territorial governments are engaged include involvement with the University of the Arctic, investment in research and development technologies for northern communities and a "circumpolar Inuit Health Action Plan" that will work towards local solutions to meeting the needs of Inuit health care and support.¹²² Griffiths, in his article "Towards a Canadian Arctic Strategy," states that Canada's Arctic responsibilities must include plans for "sustainable development, environmental protection, respect and care for indigenous life ways, safe and efficient marine transportation and scientific cooperation."¹²³ In all these cases, the best situation is for the Inuit people and the territorial governments to take the lead and strive to achieve the successes for both domestic sovereignty concerns and circumpolar stabilization in the region.¹²⁴

Arctic Council

In the 1970s the conditions within the Arctic began to change. As the prospects for oil and natural gas in the North began to surface, the federal government was faced with questions on national sovereignty, environmental protection and economic benefits. In order to deal with these complex issues, the government proposed plans for improving northern settlements and assimilating the natives of these regions into Canadian society, thereby hoping to alleviate many of the social hardships that the Inuit had faced in the past. Fortunately, the native communities themselves supported the initiatives and planned to work together with the federal government to enhance their communities and protect the Arctic frontier.¹²⁵

During the same decade, the ICC was formed to address the social, land-claim and environmental rights for the Arctic region as a whole. This approach was very new to all Inuit people who lived in different nations throughout the Arctic. Indigenous peoples were more accustomed to sharing the North with one another without the need for boundaries.¹²⁶ The need to express the concerns of the Canadian Inuit presented itself during the inquiry into the construction of the Canol pipeline, where the sovereign rights of the Inuit people needed to be taken into account.¹²⁷

In the 1990s the Arctic Council was formed with its main focus being “human development in northern communities and the need to balance resource development and environment protection.”¹²⁸ The Arctic Council was a true representation of the cooperative efforts of all Arctic nations, with inclusion of indigenous populations being at the centre of addressing the economic and environmental concerns within this region. Canada has stepped up to support a number of the initiatives for the North besides support for the Arctic Council, but Canada is still far behind with its commitments to the North compared to other Arctic nations.¹²⁹ Further measures need to be taken by the Canadian government with regard to monitoring the global and climatic effects of Canada’s Arctic, including significant scientific investments in the region. A step in the right direction has been Canada’s support in the creation of the Arctic Security Working Group in 1999. This group will be of great benefit in finding ways of bringing the Arctic Council’s agenda into the 21st century.

5. Technological successes in other Arctic nations

As stated earlier, Canada shares the Arctic with a number of other nations: Russia, US, Norway and Denmark and also sits on the Arctic Council with Sweden, Finland and Iceland. Hence, through the sharing of experiences with these other nations, Canada can glean ideas that can be incorporated into the development of its own Arctic area. Arctic nations such as Russia, Sweden, Finland, Denmark and Norway have long traditions and a solid history of development in their northern regions. The US and Greenland have also shown advancement in their relatively shorter histories in the Arctic and Far North. Canada, on the other hand, has historically done very little in comparison, and thus when looking to its path towards development of its Arctic territories and archipelago, it can gain great benefit from its Arctic neighbours.

The Inuit can look back at their history and reflect on how borders never seemed to exist for them; however, in today’s world, nations have drawn these boundaries for both the land and sea.¹³⁰ With a great deal of resources lying under the seabed of the Arctic Ocean, nations are scrambling to determine the limits of their continental shelves. It is through scientific research and the backing of the international community, under the United Nations Convention on the Law of the Sea (UNCLOS), that all Arctic nations expect to resolve the situation. As money—as well as nations’ commitments to any region—is necessary for development, it is wise to look at how other polar nations have achieved success in the areas that have been of concern for Canada, such as their investment in infrastructure, transportation systems, education, research and tourism. Canada has fostered support in a number of these areas but only from the perspective of short-term and minimal-cost solutions. There must be long-term investment in the Arctic for the programmes to be as successful as those of other nations. One area that has been explored by many of these northern nations has been its success in integrating their respective northern area with the rest of their nation, economically, politically and socially.¹³¹

With a population of around 155,000 Inuit living throughout the Arctic, it is crucial that they have a strong voice to direct the affairs within the region.¹³² Collectively, they formed the ICC in 1977 and participated in the formation of the Arctic Council in 1996, where their prime agenda was the economic and environmental well-being of the Arctic. It is through these collective and cooperative forums that Canada, with its circumpolar neighbours, enjoys the benefits of what the North has to offer.

Russia

Russia’s climate is very close to Canada’s; however, where the two countries are most different is with the human population within their respective Arctic regions. Russia has a very large northern presence, with Siberia’s population of over 35 million people being equal to the population of all of Canada.¹³³

Siberia's growth began back in 1861, when after the sale of Alaska to the US, there were millions of people who emigrated to Siberia. This growth of the Russian northern frontier also prompted several economic and social programmes in order to unite Russia's huge empire.¹³⁴ In the early- and mid-20th century, Russia resorted to forcing the development of its northern territories, with labour camps and military bases populating its Arctic area, a more repressive action for population growth. Today, Siberia is known to have very large urban areas and industrial centres to which Canada cannot make the same claims. In the early 1990s, Russia suffered a significant drop in its northern population due to the collapse of their command economy. As a result, many Siberian citizens within these industrialized communities relocated to areas in southern Russian where they could find work.¹³⁵

Similar to Canada, Russia's sovereign right over its Arctic region is recognized by the international community. With this entitlement, they have taken advantage of extracting some of the vast resources found in the Arctic to pursue economic and social development of the communities most affected by their economic crisis of the 1990s. The Russian government has been working with its civilian community, while adhering to both international and domestic rules, to create prosperous and supportable Arctic cities and communities.¹³⁶

In 2008, President Medvedev provided direction to his people on what Russia's public policy would be for the Arctic up until 2020. He stated that his main objectives were the promotion of socio-economic development, military security, environmental security, investment in information technology and international cooperation. With this plan, he also detailed his country's strategic priorities for achieving success. The following list details the Russian government's priorities to meet its stated objectives:¹³⁷

1. Address issues of international legal justification for the external border of the Arctic zone of the Russian Federation.
2. Create a unified system of search and rescue.
3. Participate as a member of the Arctic Council.
4. Enhance the participation of Russian public institutions and civil society organizations in international forums dealing with Arctic issues.
5. Confirm maritime delimitation in the Arctic Ocean and ensure mutually beneficial presence of Russia in the archipelago of Svalbard.
6. Make improvements in governance as well as social and economic development in the Arctic zone of the Russian Federation, including through the expansion of basic and applied research in the Arctic.
7. Improve the quality of life of indigenous people and social conditions of economic activity in the Arctic.
8. Develop the resource base of the Arctic zone of the Russian Federation through the use of advanced technologies.
9. Ensure the modernization and infrastructure development of the Arctic transportation system and the fisheries complex in the Arctic Zone of the Russian Federation.

Russia is now dealing with climate change in its Arctic region, and with these changes, they are facing increased maritime traffic and quests to harvest the resources in their region. To meet these changing times, Russia is introducing new techniques and technologies for extracting the mineral deposits and other resources in their seabed. The new economic benefits to the region have the Russian government investing in new aircraft, shipping vessels and improvements to their Arctic communities. As much of the area had been developed in the past, Russia's main focus is to provide the necessary support to rebuild infrastructure that will re-energize the local economies. With increased maritime and air traffic occurring and expected to continue to grow as the Arctic ice recedes, Russia has monitoring and security systems in place to protect their region and the safety of the traffic within it.¹³⁸

Most of the Russian government's economic and social plans for their northern communities mirror the Canadian government's priorities for its north. The Russian federation is planning to fund economic and social programmes for the region. Their plan is to modernize their educational institutions, housing, energy and transportation infrastructure, health-care services and tourism. With government support, communities will stay together, and the benefits afforded to their indigenous people will allow all members of the population to be productive participants in the development of the Arctic.

On the military front, as one of the superpowers of the latter part of the 20th century, and still a formidable force, Russia has a significant presence in the Arctic. To add to its military plans, emphasis will be placed on border security with the reconstruction of vital infrastructure and the provision of more sophisticated equipment for their border agencies. For monitoring the maritime environment, there will be upgrades to their current systems to ensure complete security.¹³⁹

Russia's information technology and communication systems are continually undergoing modernization. They now have more reliable navigation, meteorological and telecommunication systems situated in their most northern regions. Their ground-monitoring stations are also supported with a global navigation system, Globalnaya Navigatsionnaya Sputnikoaya Sistema (GLONASS), that supports environmental, military and economic programmes for the Arctic. Russia continues to strive to accurately place the most advanced ground, maritime and space systems for ensuring the protection and surveillance in their most northern reaches.

Russia is extremely active in science and research programmes and, through their Arctic experiments, has made significant improvements to infrastructure durability in the Arctic. With the use and development of other modern technologies, they are able to conduct studies and make predictions on climate change and the effects on the global and local environments.¹⁴⁰

Russia has taken advantage of expertise from the state, local governments, businesses and non-profit organizations to form alliances to improve the social, economic, cultural and environmental conditions in the Arctic. Many of the programmes being developed by these groups have had a positive effect towards the creation of coordinated plans for their most northern areas, with emphasis being placed on the development of socio-economic programmes.¹⁴¹ Siberia also boasts having high-tech manufacturing sectors and national climate research centres. These organizations are part of a public-private relationship that greatly contributes to the stabilization of the Russian economy.¹⁴²

Since the collapse of the Russian economy in the early 1990s, Russia has not been as focused on issues that concern the sovereignty of their northern regions, but rather, they have been concentrating their efforts on the Arctic ecosystem. As their northern waterways have been experiencing

significant exploitation of their natural resources, as well as witnessing increased maritime traffic, Russia has focused its attention on regulating these economic events. The expectations of climate change opening up the Arctic to even more activity is a significant threat to Russia; however, the government cannot deal with the situation on its own and has joined together with civilian and business organizations, nationally and internationally, to come up with solutions. As every Arctic nation looks to take advantage of developments and resource exploration as the ice continues to recede, Russia understands the negative effects upon the environment and is looking to balance this economic windfall. Russia, along with its Arctic partners, is using technologies in this region that would be best suited to keeping the environment healthy. The Russian President is outspoken on gaining the most of what the Arctic can produce but is well aware that the extraction of resources and the use of the Arctic must be balanced with the dangers that can come to the region. If renewable and alternative energy sources are not used, or if the region is overpopulated and fosters pollution, the resultant costs to the planet may be overly significant. Obviously, the measures taken must be affordable—thus the reasons for cooperative practices on a global scale for any activity in the Arctic. Current technologies exist that allow for commercial operations to be conducted, while having the ability to prevent or react to any negative consequences affecting the North.¹⁴³

Even though there is a relatively large population in Russia's northern territories compared to other Arctic nations, the Russian Arctic still has a relatively low population density compared to its southern states. As with Canada, Russia must take into consideration higher infrastructure and transportation costs and that the colder climate requires greater heating needs.

With population growth and a shift in demographics due to climate change, technology is needed and planned by the Russian federation to be more efficient and kinder to the environment. Russia is very cognizant of international climate change programmes and, hence, links its Arctic security to the conduct of its Arctic affairs in accordance with international legislation. The steps that Russia has taken include using technology that is energy efficient whose emissions do not add greenhouse gases to the environment.¹⁴⁴

The issues that are presenting themselves in the Arctic are entirely new to all Arctic nations, and Russia is not alone. Canada and Russia have very similar issues in the Arctic, particularly when it comes to scientific research. The development opportunities that are presenting themselves in a rapidly changing environment mean that both countries must work cooperatively to implement the most effective solutions for the benefit of the entire Arctic region.

Russia possesses a great deal of military might and with its complement of nuclear-powered submarines can patrol the Arctic undetected by any of Canada's current surveillance systems. Russia's surface and icebreaker fleets are also a great deal more capable than any ship Canada possesses.¹⁴⁵ With these and other assets, Russia is mapping its continental shelf to determine, from a legally and internationally acceptable position, how far its territory stretches. Canada should work with Russia to be able to reach a mutually agreeable position on the boundaries of both their claims.

United States

Alaska has grown at a steady pace under the ownership of the US with a population today nearing 700,000 people. However, prior to becoming an inaugurated state, it had its difficulties in making improvements within its region. The early pioneers suffered similar struggles as Canada did in the late 19th century of convincing governments and investors to develop Alaska. Projects such as the construction of railroads and telegraph stations were cancelled due to the high costs and lack

of dedication to rapid advancement in these regions. It was not until the gold rush of the late-19th/early-20th century when thousands of miners and settlers came to Alaska that projects progressed. With many southerners expecting to become rich, the region steadily grew with many communities springing up throughout this territory.¹⁴⁶

The US Department of Defense (DOD) made pleas to the US Congress for Alaskan military development in the 1930s. The Chief of the Army Air Forces saw a need to position bomber and other army aviation assets in this northern region. At the time, he found it difficult to convince Congress to make the financial commitments due to a lack of any perceived threat. Civil aviation, on the other hand, sought to take advantage of an untapped market for investment and built a number of landing strips, weather stations and navigation stations, beginning the opening of commercial air traffic through Alaskan airspace. It was not until 1939, when the US felt threatened by Japanese aggression close to their Alaskan borders, that DOD was able to make any significant inroads for development. The US awoke to the need for military investment in the region, with the immediate construction of the Fairbanks airbase. As a result of the war with Japan, the US now has several major air bases and numerous smaller stations positioned throughout the Alaskan state. These installations were constructed to protect the sovereign rights of this state and contribute to the economic stability of their cities and smaller communities. With the Japanese plans to invade a number of Aleutian Islands, the United States' move to construct bases and position troops in its northern region proved appropriate. Additional army bases and the stationing of submarines in Alaska were to become commonplace during the war.¹⁴⁷

The discovery of oil in the 1960s and the construction of the Trans-Alaskan pipeline brought further economic growth and prosperity to the state. The exploitation of these resources afforded Alaska the wealth for modernizing its city and state infrastructure. From these resource discoveries, other military and commercial activities evolved in the state. Major employment opportunities for their northern residents were prominent in the fields of natural-resource extraction, shipping and transportation as well as military and government offices.¹⁴⁸

Due to Canada's close proximity and history of cooperation with the US for trade, security and international relations, many Canadian citizens have felt threatened by the US infringing on Canadian sovereignty, particularly when it comes to US presence in Canada's Arctic. The reality of the situation is that the US has concerns with their security and sovereignty as well as when it comes to the protection of its Arctic property, as any threats to Canada will have an impact on the US. There have been, however, no direct attempts by the US to take control or ownership of Canadian territory. The only US-Canada disputes are Arctic maritime claims over the Beaufort Sea boundary and the status of the Northwest Passage as an international strait or internal waters to Canada.¹⁴⁹

One important distinction between Nunavut/NWT and Alaskan development relate to their geography and climate. The southern half of Alaska is much more favourable for development than many regions of Canada's Arctic. For Alaska's northern areas, where the conditions are very similar to Nunavut and the remote areas of the NWT, the US government has established military bases to assist the economic development of communities within these zones.¹⁵⁰

Alaska has various modes of transportation that connect most of its communities. By far, the railway lines contributed the most to the development of the state during the 20th century. Before the construction of any major roads, the railroad linked the Pacific harbours with many of the communities inland.¹⁵¹ Most of the roads are located in the southern part of the state, only linking the major

city centres with the Alaska Highway. There is no central road network connecting all the smaller communities. Maritime vessels are another major source of travel but are only beneficial to the coastal communities. The only real year-long avenue to reach most of the Alaskan communities is by air, for which Alaska boasts a number of airfields in both major and remote locations.¹⁵²

From a socio-economic perspective, smaller and more isolated communities do suffer with the same problems that are being experienced in Canada's Arctic communities. Although law enforcement and social programmes are more readily available in the larger Alaskan cities, the lack of the necessary systems to deal with problems in more rural areas is still a concern.¹⁵³ Canada can take a lesson from the US when it comes to educational opportunities in the Far North. Alaska has more than a dozen universities, and almost 50 per cent of its university-age population attends these institutions.¹⁵⁴

Nordic nations

The Nordic nations of Norway, Denmark, Sweden, Iceland and Finland have traditionally relied upon a unified understanding of joint protection to uphold their sovereign rights. With this cooperative approach, these nations can concentrate more on economic development and using their technologies towards community. An early example of Norwegian community development was demonstrated in 1789. In a small outpost called Hammerfest, the Norwegians constructed a liquefied-natural-gas processing centre that drew thousands of people to the area. Norwegian investment went further in promoting commercial technologies and is best known for having the first electric street car lighting in Europe.¹⁵⁵

During the Cold War years, Sweden had the desire for a collective agreement with all the Nordic countries and proposed forming a Scandinavian defence union. Norway and Denmark did not possess a significant military force, and unfortunately, Sweden did not have the military strength to protect the entire Nordic region. Thus in 1949, Norway and Denmark, along with Iceland, became part of the North Atlantic Treaty Organization (NATO) instead of signing on to Sweden's protection plans. Sweden, however, did see the need for a security policy that supported protection for all Nordic countries and formed its own military defence. Sweden is most renowned for having the second largest air force in Western Europe. Sweden's military and economic developments were intertwined where their use of technology focused on deterring any force from invading the country. Their aim was to instil the notion that an invading force would suffer much greater losses compared to any gains they would make in taking the territory.¹⁵⁶

The Nordic countries formulated a policy of "assurance and reassurance" where the security policies represented what was referred to as the "Nordic Balance." Their intent was to be part of the collective European security structure while maintaining a balance in their relationship with the two superpowers.¹⁵⁷ As part of the NATO alliance, Denmark and Norway would participate in allied exercises but would restrict any significant allied naval or air-force presence from basing their units in their respective countries.¹⁵⁸ The Nordic countries needed to be cautious that they did not create a situation where Russia would feel threatened by their actions.

During the Cold War there was an escalation in the number of nuclear weapons being built; however, the Nordic countries stood firm on establishing a Nordic nuclear-free zone within their countries. The US had offered to position nuclear weapons on their soil; this technology was intended to provide a quick-strike deterrent for NATO. In hopes of establishing trust with Russia, the Nordic countries refused; although, they did have concerns with Russia positioning submarines off their coast that could easily be considered a threat to their security.¹⁵⁹ The Nordic countries felt somewhat

secure with their collective union but needed the technology provided through a NATO alliance if they had any hopes of deterring a superpower such as Russia.¹⁶⁰ As part of the NATO alliance, the Nordic countries also had the benefit of satellite and other surveillance systems for monitoring their territory and coastal waters. However, it did give both the US and Russia, who were the principal providers of this technology, a special relationship with the Nordic countries when it came to their security. This status could be considered as an infringement on the sovereign rights of these Nordic nations—a similar status that many Canadians feel they must endure with the US influence on Canadian Arctic security and sovereignty.¹⁶¹ As the Nordic countries had very little impact in staving off either of the two superpowers on their own, it necessitated walking a very fine line in the technologies they introduced to their countries. Collective defence—domestic and Nordic defence—and a campaign showing Moscow that their countries would not be a staging area for aggression against Russia were keys to Nordic sovereignty.¹⁶²

Throughout the latter part of the 20th century, the Russian threat to the region diminished.¹⁶³ International recognition of the boundaries of the Nordic countries—through the governing and use of their lands—was not in dispute. Hence the Nordic countries could justify their sovereign rights to their territories with the knowledge that an attempt by any nation to take their lands would be looked upon unfavourably by the UN and international community. To reinforce their commitment to the international community and solidify the perception of international protection, the Nordic nations became involved in UN peacekeeping operations. Although not a technological advancement for ensuring their direct security, participation in international peacekeeping missions was crucial to ensuring international assistance against any threat to these Nordic countries.¹⁶⁴ Furthermore, by having the support of the international community as a means of protecting its borders, these nations could then turn their intentions towards uniting their people with a focus on energy resources and scientific research.¹⁶⁵

Today, all Arctic nations are making some investments for monitoring, patrolling, securing or investigating their Arctic regions. Denmark, like Russia, is using various technologies to determine and map the extensions to its continental shelves, in the hopes of gaining significant revenue from any resources that may lay within their claims. Denmark has already advanced further in their scientific collection efforts than Canada, due to the technology that they possess and the government's commitment to map this region.¹⁶⁶ Norway has invested a great deal in Arctic vessels that will be able to navigate through the thick ice in all parts of the Arctic. There are some definite climatic advantages in the Nordic communities with milder conditions and greater prospects for economic development, thus allowing for the introduction of technological advancements that are more successful and cost effective than what Canada has invested in its Arctic.¹⁶⁷ Of all the Arctic nations, Greenland, which is currently under Danish sovereignty but has self-government and is contemplating independence, is the closest match to Canada with the challenges that they face in developing and securing their Arctic regions. Similarities between these two nations reside in their climates, geographies and subsidies for economic development and security. Greenland, however, has a much more diverse economy and has paid a great deal more attention to the educational and cultural needs of its population. Canada is still paying far less than any other Arctic nation when it comes to investing in community development. When it comes to education for example, Canada, lacking a university, is spending a meagre \$0.25 per resident towards the University of the Arctic whereas Norway in comparison is contributing \$1.58 per resident and has six universities.¹⁶⁸ For Canada to express its desire for advancing community needs, it must commit more funds towards the Arctic Council initiatives and show stronger support for the University of the Arctic.

Canada can learn a great deal from the Nordic countries with the way that they meet the developmental needs of their communities. The Nordic countries have shown through their development programmes that they are addressing the needs of their northern residents. Canada's understanding of the culture of Inuit people, however, is somewhat limited, as many of the programmes and support that the government has endorsed are not accompanied by the necessary "legal, social, environmental and material support."¹⁶⁹ As has been expressed throughout this paper, many government solutions for the North have been based upon southern Canada's views of how to assist the Arctic communities instead of funding initiatives most desired by the indigenous people.

Nordic countries realized that they cannot compare in military technology to what Russia and the US possess. Thus, they found ways to mutually appease both superpowers through their programmes of reassurance and necessary alliances.¹⁷⁰ Collectively, they developed their own militaries to ensure that their combined defences are of sufficient size and strength and are technologically capable to ensure a pre-emptive attack cannot be launched against them. In the case of an attack being launched, the Nordic nations had enough military technology to combat any invading forces until such time as NATO reinforcements could arrive.¹⁷¹ As Iceland did not possess a military, their security was dependent on the US and their technology, and they permitted an allied base to be established in Keflavik. Greenland similarly allowed for NATO bases within their territory to ensure its protection.¹⁷² Norway and Denmark (European lands), although part of NATO, would not submit to the creation of allied bases on their soil to ensure friendly relations with Russia.¹⁷³ All Nordic nations, through the insistence of their people, did not allow nuclear, biological or chemical weapons in their country. This denial of technology was felt to be an important step in limiting the likelihood of Russian aggression towards their countries. The governments of the Nordic nations, instead, saw surveillance and other intelligence-gathering technologies as vital components of their security and sovereign-protection programmes, strategically locating stations within their northern regions.¹⁷⁴

Nordic governments are very cognizant of their strategic location in the world among very powerful nations that possess an abundance of sophisticated systems. These Nordic countries, therefore, base their sovereign position on ensuring a mutual understanding of a common goal of mutual defence with respect to military advancements. However, as the security threats to this region continue to diminish, the governments of the Nordic region are re-evaluating their need for military technologies and moving towards more economic, social and environmental technologies to meet the sovereign and security needs of their countries.¹⁷⁵

The advancements in military and socio-economic technologies have been a mainstay in the development of the Arctic by other Arctic nations sharing the region with Canada. As Canada continues to grow its Arctic region, it must leverage the experiences of Russia, the US and the Nordic nations to ensure a strong response to the threats that actually exist in this most northern of regions.¹⁷⁶ The other Arctic nations have had the benefit of a long history of development and occupation and in the case of the US a rich economy to be able to invest in Alaska. The investment in either military, civilian or commercial developments will come with a cost if Canada wishes to end the debates of its security and sovereignty being in jeopardy.¹⁷⁷ The Arctic is not a new realm for any Arctic nation including Canada. It is only due to the fact that with the environment becoming more accessible that Canada once again has to look at how it is meeting the needs of the North and the rest of Canada.

6. The Canadian government's current plans for the Arctic

*Canada's Arctic is central to our national identity as a northern nation. It is part of our history. And it represents the tremendous potential of our future.*¹⁷⁸

– Prime Minister Stephen Harper, 2007

The Government of Canada is professing major changes for development in the Arctic. Significant investment is being proposed for an increased military presence in the region, including the purchase of modern icebreakers as well as underwater and aerial surveillance systems and the construction of a deep-water port.¹⁷⁹ These promises will go a long way in improving the socio-economic climate in the Arctic if all government departments take advantage of the opportunities they present for their programmes in the North. This section will highlight the Government of Canada's challenges in introducing greater technologies into its northern region. The government's intent is to provide greater protection of its most northern reaches and prevent unwelcomed intrusions into Canadian sovereign territory. These initiatives must take into account the benefits that can be afforded to the local inhabitants of the Arctic. It must also ensure that the Inuit and other northerners who call the Arctic home are given a chance to voice their concerns and suggestions for Arctic developments. In light of Prime Minister Harper's announcement that Resolute Bay will be the future home of an Arctic training facility, one must be aware of the benefits and pitfalls this opportunity brings to the Arctic.¹⁸⁰ The requisite technologies that can adequately respond to the threats in the Arctic must be provided so that the plans being made are not just another symbolic gesture to the perceived challenges to Arctic sovereignty.¹⁸¹ On the issue of threats, Canadian lands are not in jeopardy and, therefore, there is little need for an influx of military assets. The main concerns are now coming from commercial intrusions into the Canadian Arctic and in particular the Northwest Passage. This increased traffic is bringing with it concerns related to environmental protection, law enforcement of federal and territory legislation, SAR concerns as well as a multitude of commercial- and community-related problems that may not necessitate a completely military solution. With this in mind, a whole-of-government approach that also brings in territorial governments, industry and the local populace must be pursued.

Department of National Defence

The *Canada First* Defence Strategy is the key document to the department's plans for involvement in the Arctic, and a main pillar within this strategy is to conduct domestic operations in the Arctic.¹⁸² Given this direction, the Department of National Defence (DND) is pursuing a number of major equipment acquisitions, including the purchase of ice-capable vessels and modern heavy-transport aircraft. Additionally, there will be investment for revitalizing existing communities and constructing new, modern infrastructure.

Canada's position on what type of maritime vessels would be best suited for their Arctic mission has created some controversy. Canada has been able to operate in the North with an icebreaker capability possessed by the CCG. As these assets are in desperate need of replacement, the government's view was to outfit the military with six to eight Arctic Offshore Patrol ships (AOPS)¹⁸³ that would be capable of working in "first-year ice."¹⁸⁴ Norway, in comparison, is investing in the next generation of icebreakers, with the ability to operate in thick ice areas of the Arctic. Russia is taking a similar position to Norway, with the intent of also acquiring these assets to be able to operate anywhere in the Arctic Ocean.¹⁸⁵ Supporters of the government's plan to purchase these midsized ice-capable vessels as "a reasonable response to the challenges and opportunities facing the country"

claim that the true threats to the Arctic region are commercially driven. These advocates assess there being a greater need for capabilities to monitor resource development, northern tourism and environmental abuse.¹⁸⁶ Furthermore, as a major icebreaker would cost considerably more money, it would be more financially prudent to invest in technologies and assets to improve the CF's overall capabilities. Those parties in opposition to the AOPS cite that without an "ice-strengthened" fleet of ships Canada would not have the same capabilities as other countries to operate in its most northern regions. Thus Canada would lose the ability to secure these areas, thereby allowing other nations to enter Canadian territory unopposed.¹⁸⁷ Others argue that Canada is short-sighted and must come up with solutions that are more conducive to protecting the environment and meeting the needs of the indigenous communities within it. Peter Wilson, a former member of the Nunavut Planning Commission, views Canada's plan as a high-cost, monitoring exercise. In his view, money would be better spent by investing in and equipping the local residents with the knowledge and assets required to carry out the government's plan at a significantly lower cost, "using soft power."¹⁸⁸

Besides the AOPS project, as part of the *Canada First* Defence Strategy, DND has already acquired a number of aircraft such as the C130J for tactical transport and C17 for strategic airlift. These aircraft have proven capable of operating in the North and are being used to replenish remote communities and to conduct SAR operations throughout the Arctic. Furthermore, DND has plans to acquire fixed-wing SAR aircraft, a new generation of fighter aircraft and a replacement for the maritime patrol aircraft. These proposed new assets would all be capable of performing various functions such as SAR, sovereignty patrols and Arctic surveillance.¹⁸⁹

In addressing the ways the CF must respond to the need to protect the Arctic, one must realize its role in domestic affairs. For any domestic operation anywhere in Canada, with the exception of SAR operations, the CF only supports other departments such as the RCMP and CCG. The unfortunate truth with these two supported agencies is that they possess a limited capability to operate in the North and in many cases need greater assistance from the CF. Therefore, unless the government sees a definitive requirement to either defend itself or intimidate other circumpolar nations that possess a much stronger force than Canada does from entering Canadian territory, investment is better suited for the law-enforcement agencies that are responsible for domestic operations.¹⁹⁰ The Canadian military then becomes a supporting force that assists the domestic agencies in protecting the Arctic environment. If the government perceives DND's mission to be the same as any other service it provides anywhere in Canada, then the investments the government is proposing in the form of AOPS, new fixed-wing SAR aircraft and the creation of a training facility would suffice, as they mirror the capabilities seen in other parts of the country.

The security threats to the North are now expected to come in the form of more commercial traffic rather than from an invasion by an opposing military. In reaction to this situation, the government has put a great deal of emphasis on building up the military capabilities in the Arctic. Canada's military, however, is relatively small with only a few assets available to operate in the Arctic. Additionally, these vessels only operate in the Arctic on a sporadic basis. The new equipment purchases will be used for some surveillance and interdiction; however, there will be times when Canada may not be aware of the unforecasted activity in the Arctic. For that reason, there have been proposals to create a "Combined Arctic Command" where Canada and the US will jointly monitor the activities in the North. In many respects, this alliance already exists with NORAD, and thus, the security of Canada's Arctic should be assured. Canada can then use funds that could become available for investment in other environmental, cultural or economic developments for various Arctic locations.¹⁹¹

Fisheries and Oceans Canada

An important element for economic development and environmental management in the Arctic is for the CCG to be provided with capable equipment. Currently, the CCG is expected to perform surveillance, scientific exploration, shipping assistance, support and resupply to communities as well as SAR activities in the Arctic, but it is only located in this region from June to November every year.¹⁹² The need for modern assets, as the CCG vessels are aging, cannot be overstated. The government's intention to purchase new heavy icebreakers for the Arctic must be fulfilled, if Canada is to be able to complete its domestic responsibilities in the Far North and enforce Canadian regulations and laws. The new CCG assets would provide the necessary capabilities to meet all the CCG's Arctic missions with the added benefit of operating in the Arctic for a longer period during the year.¹⁹³ The purchase of a heavy icebreaker, that is also expected to possess a helicopter capability, will also provide Canada with modern intelligence, surveillance and reconnaissance (ISR) functions for meeting the Arctic security mandate directed by the federal government.

Department of Foreign Affairs and International Trade (DFAIT)

Canada must realize that to be able to control the activities in the Arctic region it needs to work together with all the Arctic nations. Canada has been exposed to a number of issues in the Arctic that are best resolved through diplomatic negotiations. Thus, DFAIT plays a critical part in determining the appropriate resources that should be positioned in the Arctic, through cooperative discussions with Canada's Arctic neighbours and local inhabitants. All Arctic nations are faced with the prospect of there being an abundance of resources, which through their exploitation will have both positive and negative effects in the region. Nations must work together to monitor activity in the Arctic and ensure that the environment is protected. For Canada to be able to protect the Arctic and regions such as the Northwest Passage, it must have the appropriate level of technology to monitor the region and enforce Canadian legislation. As development in the Arctic is extremely expensive, it is in Canada's best interest to work cooperatively and make concessions that will secure Canada's interests.¹⁹⁴

Climate change, the search for resources and the effects on the environment are the security concerns of the 21st century. Canada must ensure that these concerns are addressed in its Arctic strategy. Developments such as the Mackenzie Valley pipeline will bring economic prosperity to the NWT. As viewed by Coates, this initiative is crucial for the federal and territorial governments, as it will prove the wealth of resources that are available in the Arctic. Furthermore, these developments and the technology of the 21st century will see the establishment of "fly-in, fly-out resource camps, Internet based commerce, and global competition"¹⁹⁵ that will have an unprecedented effect on the northern economy. DFAIT has to be the lead agency to deal with issues, such as US claims to portions of the Beaufort Sea, that will impact the exploitation of resources in the contested region.

In addressing the relevant issues in the Arctic, DFAIT commissioned a report in 1998 to explore circumpolar cooperation. This report focused on the impacts on the Arctic region with the end of the Cold War and came up with a number of key recommendations, with particular emphasis on environmental security. Of prime importance, there was a shift away from the militarization of the Far North and a greater focus on cleaning up the North, which would include assisting other nations, such as Russia, in cleaning their regions. The issues pertaining to re-establishing sovereign claims to the Arctic islands included the recommendation to acquire surface and subsurface surveillance systems; however, this solution is cost prohibitive for Canada alone. The options of demilitarizing and making the Arctic a nuclear-free zone will need both US and Russian cooperation in order for this initiative to materialize. Finally, in order to afford the clean-up of the abandoned military installations in the Canadian Arctic, Canada needs to work with the US. The suggestions to work

collectively on Arctic issues must also be addressed with Canada's Arctic inhabitants who have the biggest stake in the outcome of developments for the Arctic. Solutions for sustainable human and socio-economic development can also be explored.¹⁹⁶

History has provided the opportunity for Arctic organizations such as the ICC and Arctic Council to be created. DFAIT must now leverage these organizations to ensure that the technologies and developments being introduced to the Arctic meet the objectives of the circumpolar North as a whole. Canada must acknowledge its support for these collaborative organizations and invest financially in their programmes for the advancement and protection of the Arctic.¹⁹⁷

Environment Canada

Climate change in the Arctic is causing a rapid change in the accessibility and exploitation of the Arctic. With the eventual regression of Arctic ice, sea passages will open up and be traversed by vessels from all over the world. Environmental considerations will be front-page news as the effects of climate change in the Arctic have an impact on the rest of the planet. Therefore, Environment Canada must turn its attention towards scientific research and the construction of weather stations to monitor the effects of the changing Arctic conditions.¹⁹⁸ The Canadian government is taking steps to construct a "world-class Arctic research station" in the Arctic to meet the research and environmental monitoring needs for Canada and its Arctic neighbours.¹⁹⁹ Further recommendations for preserving the North have environmentalists suggesting the designation of sensitive land and marine areas as parks and protection zones, to avoid extensive traffic and overt pollution.²⁰⁰

Indian and Northern Affairs Canada

As the face of the federal government for the Arctic community and Inuit affairs, Indian and Northern Affairs Canada (INAC) must ensure that the people of the Arctic know that the best interests of their region will be respected and protected. The mandate of this department is best described in the INAC website, where it lays out the key responsibilities of the Government of Canada. The three main tenets of INAC are: (1) creating and preserving economic and educational programmes, and other related services, to meet community needs of northern residents; (2) honouring conditions relating to the creation of Nunavut, such as self-government and land-claim recognition; and (3) working with all levels of government and the Arctic peoples for the betterment of the Canada's Arctic region.²⁰¹ Hence through these relationships with government, industry, Inuit organizations and other Arctic nations, life for the Inuit and other northern residents will need to improve. As part of the future development plans for the North, the federal government has created the *National First Nations Infrastructure Investment Plan 2010–2011*, intended to identify the key infrastructure programmes for the Arctic and the funding required to meet these initiatives. An important part of this document is the acknowledgement that conditions must improve in these Arctic settlements and that a sustainable plan must be in place. This action plan will enhance living conditions with the provision of modern infrastructure, educational facilities, roads, water/sewage systems, power generation/distribution and other essential services that are commonplace in communities throughout southern parts of Canada. The fact that this plan also accounts for life cycle management of the developments needs to be followed or worsening of conditions, as has been seen in the past, will occur.²⁰² This is a good start for the continued development of the existing Arctic communities; however, the government must go farther with the development of other Arctic regions where resource discoveries will cause the creation of settlements. INAC needs to work with other departments and commercial investors to bring technological advancements to these regions and ensure the adequate development of communities with the necessary conveniences of power, water, housing, transportation systems and other expected services.

Canadian Space Agency

Canada, through the Canadian Space Agency (CSA), has access to a number of space-based satellites that it uses for various monitoring missions. In the Arctic, earth-observation satellites are used to “monitor and protect our environment, manage our resources, and ensure the safety and security of Canadians.”²⁰³ Canada owns three major satellites; one of their many functions is to provide a surveillance capability for Canada and most notably the Arctic region. One of these satellite systems, RADARSAT-1, is a sophisticated system that provides information to assess environmental conditions and the location of potential mineral resources.²⁰⁴ RADARSAT-2 is the next generation of satellites, “offering powerful technical advancements that will enhance marine surveillance, ice monitoring, disaster management, environmental monitoring, resource management and mapping in Canada and around the world.”²⁰⁵ The third Canadian satellite, Scientific Satellite (SCISAT) has the primary purpose of monitoring the depletion of the ozone layer, with a specific focus on the changes that are occurring in the Arctic.²⁰⁶ Satellite imagery and the ability to capture almost real-time activity in any region of the world is being used by Canada. Having the capability to monitor the air, land and maritime-surface regions in the Arctic will assist Canada’s sovereignty claims.

7. Future technology for Canada’s North

When addressing the future challenges to Canadian sovereignty of the Arctic, it is important to specify the nature of current and future threats. A military presence will secure the rights of the territory that they occupy. Nevertheless, as international law has recognized the Arctic lands that Canada claims as its own, with the exception of Hans Island, there does not appear to be a great need for this level of security. Canada’s greatest threats to its northern-most regions relate to the security of its internal waters, the increased traffic (air/maritime/land) as well as the commercialization and exploitation of natural resources. These threats pose concerns of an environmental, social, cultural and economic nature vice the attempts at a military invasion by another nation where Canada must respond with its own military action.²⁰⁷ Furthermore, the positioning of military forces, most of which are migratory to the region, does not adequately address the issue of a permanent and indigenous ability to meet security and sovereignty issues. With this in mind, current developments and technologies must be enhanced and new systems introduced that allow for the northern residents to take claim to their territory. This would include infrastructure and other community improvements, transportation systems that allow for better access to these remote regions, and training for the indigenous population to operate the equipment and other assets so that they can provide a security response for the Arctic. The security assets must allow for surveillance throughout the region as well as a response capability for SAR events and any natural disasters, while also having the ability to interdict any unauthorized vehicles entering Canadian territory. Canada’s northern residents must also have a voice for speaking on circumpolar affairs and be given the ability to work cooperatively with all Arctic nations.²⁰⁸ The fact that issues involving all Arctic nations can be brought forward with input from their indigenous populations will allow for a more unified and committed response to threats in the Arctic.

With concern over the long-term health of the Arctic environment and the indigenous population being most affected, emphasis must be placed on promoting security in this region for the benefit of its inhabitants.²⁰⁹ As the ice continues to recede, analysts, such as Scott Bergenson of the United States Coast Guard Academy, see the potential of the Northwest Passage having the same level of maritime traffic as the Suez and Panama Canals, particularly if this northern route is completely clear of ice in the very near future. Although a contentious issue, speculation does exist in some circles that with the advent of futuristic technologies for development in the region and the potential gain from the exploitation

of resources that changes will necessitate a reaction to increased traffic.²¹⁰ Therefore, it is incumbent upon the Canadian government to pursue technologies that will aid in the advancement of existing communities and allow for its northern inhabitants to operate and control these developments in a manner that is beneficial to their environment.

Canada has historically neglected any significant development and military defence in the Arctic. Compared to other nations of relative size such as Australia, its ability to protect its remote regions within its territory is inadequate.²¹¹ Contained within “Canada’s International Policy Statement: A Role of Pride and Influence in the World: Defence,” the threats associated with protecting Canada’s sovereignty have changed. The Arctic is opening up to a number of commercial venues, including increased mining and air/maritime traffic.²¹² With climate change having a tremendous impact on the region and populations springing up to exploit the Arctic resources, environmental and social-security issues are catching the government’s and Inuit organizations’ attention. With the expected growth in the region, the government will also need to deal with issues relating to organized crime, people and drug trafficking as well as the potential for terrorists to gain entry to the country. There needs to be a whole-of-government approach to meet the security conditions of the North and not a focus on a military build-up of assets and facilities as the only solution for protection. The CF will continue to perform surveillance, SAR and interdiction missions, but for the most part, they should be supporting Canada’s domestic agencies for control in the region.

As professed in section 6, Canada is pursuing avenues to monitor and secure areas within the Arctic with particular attention being paid to activity in the Northwest Passage. The initiatives proposed by the government are heavily dependent on having military personnel deployed to these Arctic waters and surrounding regions. However, there are other technologies available that can be more effective in meeting the surveillance needs. As well, other government departments along with the indigenous population can be employed to patrol and enforce Canadian laws in this region. Wilson, who had formerly worked for the Nunavut Planning Commission, suggested the following solution:

For a tiny fraction of what taxpayers will spend on Mr. Harper’s patrol vessels, the federal government could operate a northern-based Arctic aerial monitoring program. Inuit and other northern residents could be trained to fly Canadian-built planes from community bases across the Arctic, from Labrador to the Yukon. These small northern-based teams could provide regular, low cost, sovereignty patrols, general environmental monitoring, ice patrols, land-use permit inspections and enforcement, search and rescue, aerial photography and wildlife surveys.²¹³

These local solutions to maintaining sovereignty through community and CCG involvement are the most effective and affordable.

With the increase in mining and other resource-development initiatives in the Arctic, a concrete plan is needed. In many camps, minimal investment has gone into infrastructure or other services for community growth and sustainment. The government must establish legislation and agreements with commercial companies planning to exploit the Arctic’s resources, to invest more in community development. The government must work with them to provide proper infrastructure, roads and other essential services that meet acceptable Canadian standards to sustain the community. The government must also sustain the community through improvements such as transportation infrastructure for year-round traffic in and out of the communities. Railways, roads, airports and seaports need to be in place, linking the northern and Arctic communities so that they can replenish their resources more frequently

and ensure the sustainment of the commercial, social and economic affairs. Tax breaks and incentives for other industries to operate in these northern areas can also bring more prosperity to the region but must meet the conditions for these companies to be profitable with minimal disruptions due to climatic effects. For this to be possible, technologies present in the community must at least approach the standards in the south. To minimize some of the cost for operating in the North, advancements such as wind-turbine energy developments can be brought to the region.²¹⁴ Finally, if these investments can be made in these communities, it will be an incentive for new immigrants. Improvements to these northern communities may also lure southern Canadians looking for a fresh start in a potentially prosperous environment. If these initiatives are successful, the question of Canadian northern sovereignty will have been answered.

Canada is faced with daunting tasks of monitoring, surveilling and patrolling in the North. The federal government's initiatives for the development of the region, plus the inclusion of RADARSAT-2, will give Canada a personal capability that will aid in meeting its sovereign commitments, but a more cooperative position with other Arctic nations will ultimately meet the challenges facing the region. Combined with the high cost of development and the joint impact to all nations with the potential for increased activity in the Arctic, it makes the most sense for Canada to seek collective technologies to strengthen security for all northern nations.²¹⁵ Canada's principal ally and NORAD partner, the US, has many surveillance and patrolling assets that secure its northern territory. The sharing of technology and resources has been used in the past for the benefit and protection of both countries. Albeit Canadians in general have been sceptical of US assistance; however, agreements can be made to secure Canada's interests. Nuclear submarines²¹⁶ and airborne warning and control system (AWACS) aircraft²¹⁷ are significant Arctic surveillance assets that Canada does not possess. However, if Canada had use of these capabilities, security in the Arctic would be greatly increased. Furthermore, as these assets are extremely expensive for Canada to independently own and operate, the ideal solution would be to invest in a joint effort with the US and make the necessary arrangements for Canada to be in control of the operations using these assets within its boundaries. Additionally, as there is also a negative feeling within Canada as to the ownership of nuclear submarines, the sharing of this type of underwater surveillance capability may be deemed more acceptable.²¹⁸ However, if the Canadian government finds it necessary for Canada to conduct its own underwater monitoring, the installation of an air-independent propulsion (AIP) system for its diesel submarines may meet this requirement. As there have been significant developments in AIP technology, there is the potential for diesel submarines to operate underwater for up to a month, compared to only days when operating under battery power.²¹⁹ Although this option does not approach the capabilities of nuclear submarines for operating in the Arctic, it is a significantly more affordable venture for Canada. Reasonable surface-surveillance technologies, in the form of unmanned aerial vehicles (UAV), can also be extremely useful. A study conducted by the US Defense Science Board sees these assets as very capable and inexpensive relative to manned aircraft.²²⁰ As mentioned earlier, the northern population should receive the training for launching and maintaining these vehicles; where significant benefits would be realized is with the ability to monitor and operate the UAVs from anywhere in Canada.

From a patrolling perspective, the US government, through its Defense Science Board and National Research Council, is exploring the need to improve its Coast Guard fleet of icebreakers and other technologies.²²¹ The Canadian government would be wise to work cooperatively on the joint purchase of the necessary assets for both countries. The purchase of the same assets would allow for interoperability between the two nations, similar to its NORAD agreements, and likely reduce the costs to purchase these expensive assets.

The sharing of intelligence and monitoring capabilities can be further extended at the international level with the creation of an international satellite monitoring agency.²²² A disaster in the Arctic can cause a chain reaction worldwide; thus, Canada would be wise to join other Arctic nations, and particularly the US, in various research areas to monitor Arctic activity. Defence Research and Development Canada is pursuing an initiative entitled the “Northern Watch Technology Demonstration Project” where:

The project will provide the Department of National Defence with potential cost-effective technological options for improved situational awareness and an ability to respond to contentious events and emergencies in the Arctic on the water, on land and in the air.²²³

With departments within Canada and the US essentially performing the same tasks, it makes the most sense to share information for the betterment of the environment, development and economic prosperity for the Arctic.

The technology is available, and the desire to improve monitoring, patrolling and development of the Canadian Arctic is apparent. An important question for Canada is whether it can go it alone and afford to protect its most northern region exclusively.

8. Conclusion

Canada is a strong northern nation with a great deal of pride in its unity and prosperity. As a relatively young country in comparison to most of its Arctic neighbours, Canada has struggled with the perception that its federal government has not been proactive in ensuring sovereignty and protection of the Arctic archipelago and its northern waters. From Canada’s humble beginnings, it has used the technology of the day to enforce its claims and has been successful in these undertakings. Upon possession of these lands in the late 19th century, Canada has dispatched explorers and, through RCMP settlements, ensured regulatory control of various regions. Into the 20th century, Canada continued to react to claims made on some of its Arctic lands by having maritime patrols travel throughout the region, where symbolic monuments were erected to profess Canadian ownership. These expeditions proved beneficial with Canada’s claims becoming internationally recognized.

The Cold War brought a great deal more attention to the security of the Arctic, and Canada reacted with the positioning of radar and surveillance sites, most notably the DEW and Pinetree lines, which emphasized the use of technology to reinforce its sovereignty claims. As the cost of establishing technology in these most northern regions is costly, Canada worked with the US to make certain that it could meet security concerns within this area as well as ensure the protection of the entire country.

The Inuit settlements that exist in the Arctic have also played a critical role in maintaining a sovereign presence. The Canadian government has attempted to develop these communities and bring new technology to this region through the construction of houses, roads and other improvements. However, the federal government has fallen short in maintaining any momentum in ensuring an acceptable level of social, economic and infrastructure development that meets the needs of these indigenous people. In fact, programmes and initiatives in the mid- to late-20th century have negatively impacted these communities. Therefore, the government must look to revitalizing these regions and trust in the local governments to play a significant role in changing their current conditions by focusing on the technology that communities need and want.

Looking at other Arctic nations, Canada can learn a great deal, as many of them have faced similar struggles in developing their regions and maintaining a sovereign and secure presence. For these other nations, military developments have played a role in the development of the North, but there have also been non-military activities. Furthermore, with Canada's participation in the Arctic Council, it can work cooperatively with these Arctic nations to meet the current security problems facing the North. With environmental concerns, increased maritime traffic, the increased prospect of economic development and the higher probability of a man-made disaster being potential Arctic security issues, Canada cannot operate alone. The governments, at all levels, must provide greater investment in the Arctic, if this region is to meet the challenges of the 21st century.

The Canadian population is once again professing that its most northerly region is in jeopardy with the claims that the country is not doing enough to maintain security and sovereignty. As a reaction to this, the federal government has endorsed a position of building up the Arctic. Their platform of initiatives includes a multitude of advancements: the improvements to surveillance, scientific research and SAR capabilities; the addition of deep-water ports; and the expansion of a military presence. The governments are also embarking on plans for community development and infrastructure revitalization in order to improve the quality of life for its northern residents. The investment will be costly in dollars but is intended to bring this region of Canada up to the nation's standards.²²⁴ In the October 2007 Throne Speech, the North was highlighted with the government's promise to "bring forward an integrated northern strategy focused on strengthening Canada's sovereignty, protecting our environmental heritage, promoting economic and social development, and improving and devolving governance, so that northerners have greater control over their destinies."²²⁵ The solutions brought forward also emphasized a need for a whole-of-government approach instead of a strictly military reaction of development. The advent of a 3D approach (diplomacy, defence and development) will allow for the parties concerned with the affairs of the Arctic to work as a team. In particular, it will allow for northerners to voice their positions so that a more enduring strategy can be put in place for the Arctic

Over the last two decades, the government has made announcements to fund initiatives, in the order of several hundred million dollars, that would be used for scientific research, research funding for the International Polar Year, upgrades to the Port of Churchill and improvements to the Hudson Bay Rail Line.²²⁶ Prime Minister Harper's political message that Canada must "use it or lose it" was clearly being addressed with the move to commence these Arctic and northern improvements. Canada's approach to this circumpolar region will rely on the partnerships of all the affected parties of the Arctic working to resolve the issues of monitoring, law enforcement, bilateral and multilateral agreements as well as addressing the local needs of the communities.

The Canadian government has made a strong stance in promoting a number of initiatives for protecting Canada's Far North. Much of these promises include using myriad advanced technologies. However, further development is needed to advance population growth and the economic security of the North. For this, Canada must learn from its use of technology in the past. With new concerns over Canada's ability to maintain a sovereign position in the Arctic, Canada must invest in globally available technologically advanced systems, equipment and establishments, from both a military and societal prospective, to ensure a sovereign presence in its Arctic lands and seas. Canada, therefore, does not need to increase its troop presence in the Arctic, but rather, it needs to invest in the indigenous communities, promote the expansion of existing settlements and use technology to the maximum extent possible for socio-economic development, environmental monitoring and protection, as well as traffic control for the region.

Abbreviations

AD	air defence
AIP	Air-Independent Propulsion
AOPS	Arctic Offshore Patrol Ship
CCG	Canadian Coast Guard
CF	Canadian Forces
CFNA	Canadian Forces Northern Area
DEW	Distant Early Warning
DFAIT	Department of Foreign Affairs and International Trade
DND	Department of National Defence
DOD	Department of Defense
HQ	headquarters
ICC	Inuit Circumpolar Conference
INAC	Indian and Northern Affairs Canada
NATO	North Atlantic Treaty Organization
NORAD	North American Air Defence Command
NWT	Northwest Territories
RADARSAT	Radar Satellite
RCMP	Royal Canadian Mounted Police
SAR	search and rescue
SCISAT	Scientific Satellite
UAV	unmanned aerial vehicle
UN	United Nations
US	United States
WWII	World War II

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Chapter 6 – Between Faith and Reality: A Pragmatic Sociological Examination of Canadian Special Operations Forces Command’s Future Prospects

Colonel Mike Rouleau

Abstract

This paper is a sociological exploration of the future possibilities and pitfalls facing Canada’s Special Operations Forces Command (CANSOFCOM). But this is difficult to do because not much has been written on this relatively new entity. As a result, we look to the United States Special Operations Command (USSOCOM) and the forces exerted in its creation in 1987. The paper leverages those observations as a springboard to assessing the formative Canadian experience.

Section 2 establishes a baseline understanding of what special operations forces (SOF) are and how they fit into a wider military and governmental whole. From this generic perspective, we focus on CANSOFCOM’s structure, placement, roles, responsibilities and missions.

Section 3 establishes the analytical framework. Sociology concerns itself with the study of the collective and how their interactions shape collective perceptions and behaviours. In this context, Richard Scott’s Institutional Analysis model is used as the framework to explore the regulative, normative and cultural-cognitive pillars. The regulative is concerned more with tangible authorities, responsibilities and accountabilities, while the normative pillar addresses “what is good” and morally governed. These elements, thus, possess an obligatory dimension to the social group. Lastly, the cultural-cognitive pillar speaks to “what is right” and culturally supportable as seen through a common frame of reference. In the end, all institutions seek legitimacy as a function of their very survival, and Scott’s three pillars shed light on the undercurrents that pervade every institution.

Section 4 is an examination of the USSOCOM case study. The Vietnam war caused the United States (US) Department of Defense (DOD) to lose legitimacy in the eyes of its society. Exacerbated by other operational failures, DOD became malleable to change. The 1987 Goldwater–Nichols Act (GNA) was the principal by-product of this fact and was responsible for the creation of USSOCOM as a unified command. The case study reveals the regulative pillar as being the most critical to USSOCOM’s creation but that enormous anti-SOF normative and cultural-cognitive tensions existed within DOD, primarily among the four major Services.

Section 5 extrapolates how this informs CANSOFCOM’s situation. It begins by examining the external observations but concludes that, in the main, favourable exogenous conditions exist. In Canada’s context, CANSOFCOM’s very creation tells us it enjoys a level of senior leadership support; ergo by definition, the regulatory pillar is less important to focus on. An assessment of the internal environment reveals that this is the area requiring most attention. Largely centred on the normative and cultural-cognitive pillars, CANSOFCOM’s leadership must pay significant attention to consolidating internally as a function of establishing long-run conditions for success.

The paper concludes by postulating that while CANSOFCOM enjoys generally favourable conditions, its leadership must remain ever alert to the delicate balance needed for this unique organization to remain recognizable to the wider military, while projecting its military and whole-of-government capabilities forward.

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1. Introduction

Sociology concerns itself with the study of the collective as a function of understanding how the interactions of many different actors arrive at a shared reality. The premise offers that pre-existing individually held beliefs are subject to change based on group interaction. Institutions are one social vehicle through which aggregate individual perspectives form into a more complex whole, creating social stability and attendant inequalities and, thus, require justification to remain acceptable to the group.¹ Accordingly, legitimacy is crucial to long-run institutional viability. Institutions take time to develop from the mosaic of forces at play in contemporary society, situating individual actors within a complex environment with one of the dominant characteristics being organizations, which can be viewed as a series of dialogues and interplay between communities of people.² This is especially true in the military where proud traditions and history foment rich exchanges between various constituencies. The requirement to understand the dynamics of individuals working within organizations that comprise institutions is of the essence, especially to the military leader whose job it is to ensure the nation is protected against those who threaten its interests.

Charged with the well-being of a vital national institution, Canada's military leadership must develop an appreciation for the subtleties of the often invisible interplay between people, processes and structures in the context of internal and external environments. The Canadian Forces (CF) has changed substantially in the past decade, largely as a result of the terrorist attacks of 11 September 2001 (9/11), which altered the national-security paradigm calling for refinements to Canada's instruments of national power.³ The CF response to these changes has been evident, particularly in relation to the creation of CANSOFCOM, stood up on 1 February 2006. This paper's objective is not a retrospective analysis. Rather, it seeks to understand the challenges and possibilities CANSOFCOM faces moving forward, hard to achieve because its relative infancy offers precious few reference points. To overcome this, the author will assess the American enterprise of creating USSOCOM. It will examine USSOCOM's experience to extrapolate what strengths, weaknesses, opportunities and threats exist for CANSOFCOM and where finite resources should be applied to maximize CANSOFCOM's potential.

The lens through which the USSOCOM experience is assessed will be sociology's Institutional Analysis (IA) model. Designed to understand the implicit role of institutional forces behind decision making, the author intends to uncover the tremendous intra-military tensions around the creation, mandate and role of USSOCOM, which to some degree persist to this day.⁴ This will be achieved by using IA's framework of regulative, cognitive and normative domains against which institutions justify their actions. Setting this reality against CANSOFCOM's position in 2011 allows for a series of deductions and hypotheses to emerge, which may be useful for the future. The analysis will illustrate that in order to extend its institutional legitimacy CANSOFCOM must attend to several crucial internal and external facets primarily in the normative and cultural-cognitive domains. The paper will demonstrate objectively that external conditions are generally favourable. This paper argues that while that environment requires constant attention, the lion's share of near- to mid-term attention must be focused inwardly to cement a foundation of the quality required for this important command's long-run success.

Section 2 establishes the context for understanding how the regulative, normative and cognitive dimensions of the IA framework help or hamper the development of SOF within a wider military organization. It will set the stage by explaining what SOF is and how it is meant to complement the portfolio of military power available to government at the strategic and theatre-strategic levels.

Demystifying what constitutes special operations is essential to then understand how SOF's roles, missions and tasks are assigned and prosecuted in support of wider policy objectives. A more nuanced view is required than simply disaggregating SOF as "unconventional" from conventional forces. Rather, this section will seek a more refined perspective, portraying the strategic and operational interdependencies that exist across the SOF-conventional continuum of forces. Having established the philosophical doctrinal differences, CANSOFCOM will be situated within the Canadian context. A relatively recent creation, this segment suffers somewhat from a lack of open-source information, but sufficient text and expert opinion exist to buttress the case this paper seeks to make. CANSOFCOM's internal and external environments will be unpacked to set the stage for understanding how the IA's competing demands affect it.

Section 3 introduces the analytical framework, the IA model. It will begin by gaining a sense of what organizations and institutions are from a historical perspective in order to situate them in today's context. Large bureaucracies, such as militaries, are complex ecosystems of actors and interests whose carrying capacity is especially challenged by sudden shifts. An assessment will emerge that neither the organization nor the leader is fully in control of destiny. Rather, they are inextricably linked, buffeted by myriad forces that chart a workable path forward, born of compromise as it is. The IA model will be broken into its constituent parts of regulative, normative and cultural-cognitive pillars to better understand the implicit role these forces exert on both leader and organization. Recognizing this subtext allows us to better understand why certain decisions are made, or not, in the face of seemingly obvious choices. This section's theoretical model sets the stage for a practical examination of how USSOCOM came into being as part of a major US DOD reform in the 1980s.

Section 4 examines the DOD's Reorganization Act of 1986, also known as the Goldwater-Nichol's Act. It will begin by situating two previous DOD reorganization efforts in the 20th century and focus on the root causes of what drove the GNA to come into law. This landmark legislation was designed to improve US military effectiveness by curtailing the power of individual Services toward a more capable joint force. An element of this legislative direction was to mandate the creation of USSOCOM, but institutional pressures persisted to delay this. The section will close with an assessment of USSOCOM's evolution against the model and reveal that the majority of the friction space was internal to DOD, centred on the normative and cultural-cognitive domains. They were sufficiently entrenched as to require sweeping regulatory action to alter them. While careful to avoid any linearity between USSOCOM and CANSOFCOM, this section establishes the American SOF experience primarily in the context of its struggle with big Army, Navy, Air Force and Marine Corps to serve as a harbinger of the type of challenges Canada's special operations community might work to actively avoid in the future.

Section 5 explores what all of this might mean for CANSOFCOM moving forward. It begins with a look at the external implications and what the command may focus on as a function of consolidating the CANSOFCOM brand. It then turns to an assessment of the internal workings, highlighting numerous areas for consideration. These internal items, in aggregate, represent the most urgent area that CANSOFCOM should attend to as a function of setting conditions for externally sustainable legitimacy to take hold. Finally, this section offers several observations that are common to both external and internal environments, such as the formulation of a defined, yet elegantly simplistic, strategy to achieve progress. We focus to some extent on the leader here. There are limits to what this individual can hope to accomplish within the institutional context, but progress is possible. It requires the deliberate selection of a finite number of objectives and attendant strategy and plans to set out on achieving them. Perhaps more importantly, it requires the art of generalship in cultivating strategic relationships across

broad constituencies while remaining squarely within boundaries as a CF institutional leader. Balance, influence and guile superimposed on credibility are all key ingredients to successfully moving the agenda forward. Credibility, like trust, is a fragile yet inherently powerful concept. Without it, the institutional leader is ineffective, and it is derived largely from their organization. This is especially true in SOF, owing to the mission's sensitive nature and the reality that failures, on whatever scale, can dampen the will of political leaders and policymakers to support SOF's employment and progress. While victory has a thousand fathers, failure belongs solely with the leader, so it is imperative that CANSOFCOM's institutional leaders recognize the primacy of a healthy operational culture downward and inward. This requires personal attention and places an equally important didactic pressure on both leader and organization as a function of long-run legitimacy.

The paper concludes on the importance in understanding the nuance that underlies how organizations, and their leaders, arrive at certain junctures in history. If life is rarely black and white, this is especially true of strategic military affairs where political, social, diplomatic, economic and informational dimensions predominate. CANSOFCOM's overarching situation moving forward is positive, yet its leadership must remain acutely sensitive to the delicate balance to be struck between remaining recognizable to the wider military and pursuing capability development in the context of the whole of government. The Commander of CANSOFCOM requires a duality of approach, external and internal, best clarified through a succinct strategy. This paper makes the case that that this commander must focus more internally than externally. Leaders, and by extension organizations, require highly developed cognitive abilities to see through the strategic mist to make sense of competing demands to arrive at workable solutions. More to the point, pragmatism is the order of the day. Institutional leaders are not simply leaders of their subset of the overall organization, but they are institutional leaders of the whole as well.

2. SOF

Defining SOF

Agreeing on a definition of SOF⁵ is almost as difficult as defining terrorism. The search for meaning must be rooted in an appreciation for the nature of contemporary and future threats to national security. To be legitimate, military capabilities must be relevant to the environment. The combined effects of globalization and post-9/11 transnational Jihadist terrorist networks call for multifaceted SOF, capable of direct and indirect actions. Robert Martinage, Senior Fellow for the Centre for Strategic and Budgetary Assessments, reported to the US House of Representatives House Armed Services Committee (HASC) in 2009 that SOF needed to be as capable of man-hunting and global-disruption operations as they did capacity building in scores of countries around the world.⁶ In Commander USSOCOM's 2010 Posture Statement, Admiral Eric T. Olson offers:

In this 'new normal' in which our forces operate, emerging security challenges to our nation come evermore from agile and elusive adversary networks versus traditional, uniformed military formations. Therefore, the value of adaptive special operations forces is at least as much in their mindset as in their skill set.⁷

Two deductions emerge. First, that SOF is an important component of the military dimension to Western states' instruments of national power, today and into the foreseeable future. A logical subset of this is that SOF cannot undertake this work in isolation. They are required to accomplish their missions within a wider governmental policy framework involving other agents

who deliver national power. Militarily, they work within a much larger organization possessing broader capabilities. Secondly, SOF is a unique military tool. While part of the military, they are seen to have a niche institutional strategic role in countering threats to national security. But a more detailed sense of SOF is necessary to advance the analytical foundation of this paper.

To define SOF as “unconventional” is misleading because it implies they are everything conventional forces are not. This is not so. Military leaders make calculated force-capability and force-mix choices in search of a balanced portfolio to service government policy objectives. Smaller nations like Canada simply lack certain military capabilities. Moreover, conventional capabilities continue to evolve.⁸ Properly defining SOF must assume they *enhance* overall military capabilities; ergo, SOF does things conventional forces cannot do by virtue of the nature of warfare itself. To understand why this is requires a brief look into why warfare is inherently difficult. Carl von Clausewitz’s concept of the frictions of war can be broadly described in three tranches: constraints imposed by human physical and cognitive limits, informational uncertainties that result in unforeseeable differences between perceived and actual reality, and the structural non-linearity of combat processes that give rise to long-run unpredictability of results and emergent phenomena.⁹ In sum, Clausewitz’s theory accounts for why even the simplest of undertakings in conflict are inherently hard and why every soldier appreciates the adage, “no plan survives contact.”¹⁰ But there is a direct link between overcoming friction on the battlefield and the quality of soldiers as individuals. Author and noted scholar Robert Spulak posits that conventional forces are large in order to contend with the frictions of war and that, as a function of SOF selection criteria, the “high attribute spread” is much reduced in SOF, allowing it to better contend with the unpredictability of warfare.¹¹ Several deductions can be drawn from Spulak’s perspective in the context of Clausewitz’s frictions of war. Firstly, the individual qualitative variable is less pronounced within SOF. SOF has a higher concentration of high-attribute troops than the conventional force does. This accounts for why smaller numbers of personnel can have disproportionately significant effects. Secondly, because their individual quality is relatively high, SOF is well suited to incorporate more complex technologies into their force. Readily incorporating technology into the organization allows for a positive technological overmatch to occur, thereby heightening the probability of successful outcomes. And thirdly, the aggregate of high-individual quality allows for greater creativity and agility in planning, preparing and executing tasks. This is important because it creates a competitive advantage against one’s opponents at best or, at worst, levels the playing field against well-prepared opponents. In other words, SOF allows for a commander’s options space to open up.

Small numbers of specially trained troops can achieve effects out of all proportion to their size. Former Commander of Australia’s Special Operations Command, Major-General Mike Hindmarsh, supports this line of reasoning, positing that SOF offer expanded or alternative options to military leaders and policymakers and that they often act as national economy-of-force options. He also adds that SOF must be organizationally agile and highly adept at integrating within joint, combined and interagency frameworks.¹² In light of this, a useful definition of SOF is found in the conclusions of Spulak’s analysis:

Special operations are missions to accomplish strategic objectives where the use of conventional forces would create unacceptable risks due to Clausewitzian friction. Over-coming these risks requires special operations forces that directly address the ultimate sources of friction through qualities that are the result of the distribution of attributes of SOF personnel.¹³

The author prefers this definition because it centres on people as a function of capability and the mission.

CANSOFCOM

Having established what SOF represents within the military context, we now turn to CANSOFCOM's place within the CF. Before CANSOFCOM, there was Joint Task Force 2 (JTF 2). JTF 2 was created in legislation by the Government of Canada (GC), transferring Canada's kinetic counterterrorism (CT) responsibilities to the Department of National Defence's (DND) CF from then-Solicitor General's Royal Canadian Mounted Police's (RCMP) Special Emergency Response Team (SERT). JTF 2 began its training to assume the CT mandate in 1992 and was declared operational on 1 April 1993. Masked beneath significant cloak of operational security, JTF 2 is believed to have deployed on operations in Africa, the Balkans and South America during the 1990s. Following the events of 9/11, the unit deployed to Afghanistan as part of the US-led Task Force K-Bar. For its valiant service, JTF 2 was bestowed the United States' Presidential Unit Citation in 2008.¹⁴ Although a very secretive force, JTF 2 was becoming firmly established as a premier Western SOF unit alongside other Western special-mission units. In the aftermath of 9/11, the GC committed to a significant expansion of JTF 2, indicating the highest possible level of political and military support. In a post-9/11 world, JTF 2 was fast becoming an institution in its own right.

Shortly after assuming the portfolio of Chief of the Defence Staff (CDS) in December 2004, General Rick Hillier began a CF transformation process. CANSOFCOM was born of this process, standing up on 1 February 2006, as one of four operational commands in the CF.¹⁵ Its role was defined as providing "the CDS and operational commanders with agile, high-readiness Special Operations Forces capable of conduction [sic] special operations across the spectrum of conflict at home and abroad."¹⁶ The internal makeup of CANSOFCOM comprises a formation headquarters with four subordinate units: JTF 2, the Canadian Special Operations Regiment (CSOR), the Combined Joint Incident Response Unit (CJIRU) and 427 Special Operations Aviation Squadron (427 SOAS).¹⁷ The purpose of creating CANSOFCOM was to enhance SOF effectiveness within the CF. In other words, it aligned various disparate elements and created others under one unified command whose overarching mandate was to deliver integrated SOF effects quickly, wherever they were needed. While this change represented a significant step forward in establishing a bona fide SOF entity within the CF, it must be understood as an inherently challenging endeavour internal to the command. Moving from JTF 2 to CANSOFCOM would not be without expected teething pains, and this will be explored further in section 5.

The command's external environment begins with the wider CF. One of four operational commands, CANSOFCOM is unique from the others in that it undertakes force-development (FD) and force-generation (FG) activities which, in the rest of the CF, are the purview of the Army, Navy and Air Force.¹⁸ Living within a modest military structure of approximately 100,000 Regular and Reserve Forces of finite resources, CANSOFCOM navigates the usual people, equipment, readiness and infrastructure pressures that all subinstitutions of the CF face. A glimpse of CANSOFCOM's posture, leaving the door ajar for further expansion, can be found on its website:

2006 was our launch point to the establishment of what is quickly growing into a robust, coherent strategic tool. Regrouping existing capabilities, enhancing others and creating yet more, CANSOFCOM has quickly developed into a significant actor within the Canadian security and military architecture.¹⁹

This quote carefully establishes the command as a progressive entity but one that is at a point of departure, implicitly leaving open possibility for future expansion. More than that, the quote postures CANSOFCOM beyond the CF into Canada's national-security fabric. It defines its

strategic contributions through the traditional military defence lens by outlining three core strategic capabilities. First, it acts as the lead for CT response both domestically and abroad. Second, it is a command that is globally focused and capable of shaping the operational environment, and third, that it does so through rapidly deployable SOTFs.²⁰ In acknowledging that CANSOFCOM is rarely able to achieve its objectives unilaterally, it expounds five objectives in conjunction with other elements of the CF:

1. to assist, establish and maintain Canadian sovereignty;
2. to organize, enable and improve surveillance on marked threats;
3. to conduct discrete and overt surveillance;
4. to persuade or deter others from inappropriate activity on Canadian territory; and
5. where necessary, to disorganize, disrupt, degrade or deny others from inappropriate actions on Canadian territory.²¹

These objectives place CANSOFCOM in a unique position as a military command, straddling the defence, security and intelligence domains within Canada's national-security architecture. Its operational outcomes seek to destroy or degrade violent extremist networks, limit or deny violent network access to populations and assist in capacity building of partner nations to do the same. In this sense, CANSOFCOM works closely with GC special operating agencies of the Department of Public Safety like the RCMP, the Canadian Security Intelligence Service and the Canadian Border Services Agency, to name a few. By extension, such cooperative arrangements require strategic connectivity and relationships with the Privy Council Office which are not traditional for the CF's three environments. In terms of its external environment, we thus note that CANSOFCOM's mission requires it to be a savvy strategic partner who is but one small element among many, both within and without the CF, in the pursuit of the defence and security of Canada. Accordingly, CANSOFCOM must delicately balance its power relationships among a diverse array of military and GC leaders so as to ensure its actions remain carefully aligned within its governance framework. That CANSOFCOM is so closely connected with national-security agencies beyond the CF makes it part of the wider State institution and throws open the door to another layer of potential institutional tensions. It also exacerbates the internal challenges associated with defining what type of military institution CANSOFCOM is. If this identity issue is not carefully managed, it can cause a counterproductive, inward dyslexia to take hold.

CANSOFCOM's external environment also includes a robust Western SOF network. While there is little Canadian open-source information on how CANSOFCOM formally nests into a wider Western international SOF campaign plan, a look into US sources is more telling. Commander USSOCOM, as the designated lead under DOD's Unified Campaign Plan, hosts a Global Synchronization Conference (GSC) biannually. Canada's flag appears on that conference's website as one of only three foreign countries—the other two are the United Kingdom (UK) and Australia. GSC's mandate is to “coordinate and synchronize collaborative network activities to combat the threat of transnational terrorism.”²² In testimony before the HASC in 2006, then-USSOCOM Commander General Brown stated, “SOCOM [Special Operations Command] forces operate in the only environment that can lead to success, which is the joint interagency combined coalition,”²³ which reinforces the underlying emergent US philosophy that security, defence and intelligence cooperation at national and international levels is the *prima facie* requirement to success in the

current operating environment. Based upon Canada's early involvement in Afghanistan as part of the US-led Task Force K-Bar and the information cited above, it is reasonable to conclude that CANSOFCOM maintains a robust network of SOF-related activity with a select group of Western nations who share national interests in various regions of the world.

Exacerbating the challenges of linking into a wide array of stakeholder groups is the fact that CANSOFCOM is a young organization. It is six short years into the task of creating a unified command from both seasoned and nascent organizations. This brings with it inherent internal organizational challenges that leaders must contend with, while decisively engaged in operations in South-west Asia. The requirement to mould a cohesive command culture and climate, while allowing sufficient room for healthy subcultures aligned within the dominant culture to form, is as necessary as it is challenging. Moreover, the command is growing as an opportunity cost for other CF elements as CANSOFCOM draws on joint and environment resources. Supported by senior leaders as a net positive capability to the overall CF portfolio, CANSOFCOM's senior leaders must remain alert to the possibility of interne-cine resource struggles. Lacking the institutional gravitas of an environment places it in a delicate position. This is further challenged by its operations outside the purely traditional defence community into the wider security and intelligence community.

The CF created CANSOFCOM from modest beginnings as a function of operational relevance and necessity in a post-9/11 environment. Ergo, by definition, the external environment is to some extent inviting toward CANSOFCOM. But that does not minimize the challenges associated with operating in the external environment space. Internally, its relative youth implies both opportunity and risk. Opportunity comes from a relatively unscripted slate able to be penned in the best manner possible. Equally, however, risky because it can ill afford to misstep for fear of losing what precious institutional legitimacy it has garnered over a half decade. Accordingly, we see that CANSOFCOM's internal and external environments are not without significant potential pitfalls if it does not prosecute its duties with great care.

Having established a limited baseline of what CANSOFCOM is, we need to look at a more documented example of a special-operations entity that has developed and see it through a sociological IA framework to fully understand the forces that constrain and propel it forward. Understanding the IA framework will allow us to disaggregate these tensions in order to make sense of why decisions are taken, or not. It is only once we assess USSOCOM development through the IA framework that we can return to CANSOFCOM and make certain educated organizational and leadership deductions about the future.

3. The analytical framework: Institutional analysis

This section proposes a lens through which we might view the USSOCOM experience in order to firm up a hypothesis for CANSOFCOM's evolution. We begin by gaining an appreciation for what organizations are, what defines their identity and how they relate to their environment. This section will briefly discuss high-reliability organizations (HROs) because they are germane to the nature of SOF, especially those charged with national-mission-force responsibilities. From organizations, we move to institutions in making the case that not every organization is an institution, but once institutional status is attained, it embarks on the constant quest for, and struggle to maintain, internal and external legitimacy. Next, we turn to the main focus of the section, Richard Scott's IA model and the framework used to assess SOF in this paper. Scott's model will be unpacked to expose his regulative,

normative and cultural-cognitive pillars that are central to understanding the implicit role institutional forces exert on decision making.²⁴ The strength of his model will be highlighted, as its expansiveness accounts for a range of sociological factors which is required to understand how they interrelate with one another. The inherent strength of IA is that it does not prefer the individual actor but takes a decidedly organicist view where “actors in interaction constitute social structures, which in turn constitute actors.”²⁵ The section will close by emphasizing legitimacy as an institution’s centre of gravity. Without it, little is possible, but to harness legitimacy is to empower future prospects.

Defining organizations can encompass many facets because there are many schools of thought beyond the scope of this paper. So it is useful to start simply. Conceptually, an organization is an entity having a goal or purpose that resides in an environment and is comprised of physical structure, technology, a social structure and a culture.²⁶ What separates organizations from other collectives is their relatively high formalization and goal specificity.²⁷ Noted organizational theorist Philip Selznick offered that “the most important thing about organizations is that though they are tools, each nevertheless has a life of its own.”²⁸ Selznick accepted rationalist views that organizations were rationally ordered entities designed to attain specific goals; however, he noted non-rational factors prevailed as well. The first was that individual actors were “wholes” as opposed to merely occupying a position. That is, actors brought bias and self-interest to the firm every day. Secondly, he noted that complex informal systems linked participants, often outside official boundaries. But neither of these assertions necessarily represents weaknesses, as we will see later when discussing institutionalization. Rather, they are enduring sociological facts. This leads to the context within which organizations reside, an overarching environment where many external forces buffet the trajectory toward specific goal attainment. Appreciating this fact acknowledges that organizations are permeable, open systems. We, thus, arrive at a useful definition: “Organizations are congeries of interdependent flows and activities linking shifting coalitions of participants embedded in wider materiel-resource and institutional environments.”²⁹

Before turning toward institutions, we detour toward HROs because they are relevant to SOF. HROs are generally defined as organizations that repeatedly perform activities within high-hazard environments or with high-hazard technologies but who experience very few errors or incidents.³⁰ They are characterized by strong social and political pressure not to fail and a high degree of specialization; they also feature broad interactive complexity between agents.³¹ National-mission-force elements of SOF appear to fit the criteria as HROs, and what is interesting in the literature is that HRO design is, by its very nature, contradictory. It favours high degrees of both centralization and decentralization, at the same time, to gain high reliability:

Centralization provides coordinating values and permits the best use of experience in the organization. Thus it is reliable. It is also fast as it provides a way to move beyond a conflict deadlock. On the other hand, decentralization allows sensing of action where problems occur. Thus it is likely to lead to faster response because hierarchy is circumvented.³²

Reliability in an organizational context is normally perceived as output related, but in the case of HROs, it is often about what does not happen.³³ These are sometimes referred to as “dynamic non-events.”³⁴ As with HROs, failure for SOF tends to be perceived extremely seriously both externally and internally, relatively more so than in the conventional forces. This is due to the strategic nature of SOF because they are a national asset. It is also due to their *raison d’être*, in that they represent the last line of defence and security for kinetic resolution to terrorist events, and so failure

anywhere has the potential to question overall reliability. This goes to the heart of the matter, trust. SOF is trusted by the highest levels to always perform well under the most demanding of circumstances. It is for this reason that CANSOFCOM places a premium on well-developed risk assessments as a function of clearly articulating the breadth of operational risk factors, so senior leaders can make well-informed choices. This is especially important given the distributed nature of most contemporary missions. Action-focused HROs are, by definition, “decomposable,” sending smaller entities to operate semi-autonomously.³⁵ In that way, they are junior leader-centric to some degree. It is reasonable to conclude that culture plays a very significant role in HROs because of their context. Participants must willingly shoulder a portion of the organization’s burdens as their own in order to attain organizational success. The author argues this would dampen the propensity to act out of individual self-interest as one might in a more benign setting. The combination of tight and loose coupling provides for a blend of comfortable predictability, while allowing for the exercise of low-level franchise, thus empowering individual actors.

Suffice it to say, SOF are exceedingly sensitive to constantly active pressures around legitimacy as a function of effectiveness, control and dependability. Moreover, this contributes to an acute inward self-consciousness driven in large measure by the close attention paid to it by senior State leaders and officials. There exists an unspoken quid pro quo arrangement whereby SOF are the benefactors of much largesse in terms of resources, profile and missions, but in return, they feel a deep-seated sense of duty to never betray that solemn trust. This places significant pressure upon SOF’s leadership at all levels. This rapid detour to HROs was inspired by the valid reference point they offer in considering SOF. This better situates the ensuing analysis.

Having established what constitutes organizations, let us turn to institutions. Scott defines institutions as “comprised of regulative, normative and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life.”³⁶ Scott goes on to suggest institutions have two major properties: they are generally resistant to change and they transmit across generations. To underscore the institutional organicist perspective, Berger and Luckmann emphasize institutions are dead if only represented in objects and verbal designations. Rather, they “are brought to life” on the basis of real human contact.³⁷ Extrapolate this claim to a low-performing, low-achieving institution with an obscure goal against one rife with talented actors charged with a goal central to the nation. It follows that the latter institution would be much more “alive” in every way. It would have a qualitative richness about it as SOF units generally tend to. This could be a force for good, able to be harnessed into creative output, but it could also be potentially bad. Such organizations possess strongly held beliefs in what is right and wrong, good or bad, and this can translate into a magnification of concern when the wrong inputs are sent into the institution. This traces back to the inward insecurity as well. We further explore this idea in section 5 when we examine CANSOFCOM in greater detail, but the marker is worth noting in light of Berger’s vivid descriptive.

Scott embraces an integrated view of institutions within his model, where any of the three pillars represents a model in and of itself, depending on one’s perspective. He addresses the tension between scholars who prefer a structural-cultural institutional view and those who see individual actors as the main agents to institutional outcomes. He qualifies this as the debate between control (the institution bounds actors to act within acceptable arcs) and freedom (the institution is the vehicle used by individuals to act) and says it is a false choice to make a binary selection.³⁸ In other words, actors are affected by the context of the environment external to the firm, but the firm also provides a context in its own right. Each affects the other. The institution is both the medium and message in the delicate interplay of a social construct called an institution which is sometimes referred to as Scott’s Layered Model.³⁹ We turn to the process of how this occurs.

The term *structuration* denotes that “social structure involves the patterning of social activities and relations through time and across space. Social structures only exist as patterned social activities, incorporating rules, relations and resources reproduced over time.”⁴⁰ Scott establishes four “carriers,” which propagate institutional rules, norms and culture forward through time. Symbolic systems, relational systems, routines and artefacts all have roles to play in this regard.⁴¹ But growing an institution requires a jumping off point, and maturing it takes time. Scott notes that emergent institutions often displace extant ones or, at least, assume part of their market share.⁴² Practically, while CANSOFCOM may be a net benefit to the CF, it can be perceived by some as threatening to individual environments. Scott is careful to point out that despite well-reasoned rational choices of their designers, institutions have limitations and can carry negative second-order consequences.⁴³ This is because the initial assumptions and predictions do not remain linear over time. They, and by extension the institution itself, are elastic in ways that are virtually impossible to map over the long run.

Various categories of actors impact institutions, but we will briefly examine two: professionals and elites. Professionals operate mostly in the cultural-cognitive space by continuously adapting and shaping the conceptual viewpoint using ideas as their catalyst.⁴⁴ I would add into this category what Scott refers to as *institutional entrepreneurs* or actors who have a game-changing role in the institution.⁴⁵ This notion is useful because SOF is often the military entry point for new and emerging technologies and methodologies into the wider field force.⁴⁶ SOF are in some ways institutional entrepreneurs for the CF—a fact that can be leveraged to positive effect. Elites in the context of Scott’s definition are corporate in nature. I extend this to include the possibility that some may corporately view SOF as elitist. Internally, Canadian special operations forces (CANSOF) professionals eschew outright the notion they are elite within the CF. Rather, they see themselves as masters of their tradecraft. But they could be seen as “soldiers of the elite”—privileged troops within the eyes of State leaders. Should that be the case, and owing to the nature of the roles and missions which give access to very senior military-strategic or political leaders, it would follow that CANSOF leaders must be ever careful to delicately balance access and governance, so as to maintain institutional integrity and balance with external stakeholders. In other words, overly leveraging elite status is a pitfall to be avoided at all costs, for it would agitate against institutional credibility. Because of the uniqueness of this paradigm, the CF’s appetite for CANSOFCOM to overplay its hand is limited to incremental adjustments that have broad-based support beyond the chain of command. It is wise for CANSOFCOM to socialize major initiatives with the environments and other key leaders before going to the boss for approval.

Before turning to the three pillars themselves, we look to Selznick’s two steps of institutional growth. He situates this process in the context of power relations and posits the first stage is the creation of formal structures as an institutional response to a problem. For CANSOFCOM, this was achieved in 2006 with its creation. The second stage is the “thickening”:

Beyond lies what we may call “thick” institutionalization. ... Thick institutionalization takes place in many different ways. Familiar examples are: by sanctifying or otherwise hardening rules and procedures; by establishing strongly differentiated organizational units, which then develop vested interests and become centres of power; by creating administrative rituals, symbols, and ideologies; by intensifying “purposiveness,” that is, commitment to unifying objectives; and by embedding the organization in a social environment.⁴⁷

This description accurately portrays the stage in which CANSOFCOM currently finds itself. The table is, thus, set to more deeply examine Scott's three pillars. We will now unpack the regulative, normative and cultural-cognitive pillars which, in aggregate, provide a deeper and more meaningful understanding of the challenges institutions face below the surface of seemingly rational choice. The exploration of the three pillars must be set in the context of an institution operating in an open system struggling to gain, maintain and advance its legitimacy.

The regulative pillar centres on a specific and easily identifiable genre: rule sets. This perspective tends toward individuals and rational choice around three organizing principles: setting of rules and regulations, monitoring their performance and sanctioning activities.⁴⁸ That is not to suggest, however, that rules cannot bleed into other pillars. To the extent that rules are generally not all-encompassing, there is an interpretive aspect, giving rise to judgement which in turn is better assessed in the normative pillar.⁴⁹ The regulative pillar in the context of this paper is seen as the easiest to identify and quantify. It is also the most important in terms of legally establishing and sanctioning a subinstitution within the wider institution that is the CF. But once that important work is done, it resonates less than the other two pillars because it is more individual-actor centric. The mutually supporting relationship the regulatory pillar shares with its normative counterpart is important to underscore. To be sure, the regulative pillar is exceedingly important in our advanced Western parliamentary democracy that places a rightfully disproportionate emphasis on authorities, responsibilities, accountabilities and oversight, especially as it relates to the military instrument of national power.

The normative pillar is about what is good and morally governed as a function of the social obligation individuals and collectives feel toward their societal institution. Scott defines this pillar as emphasizing the normative rules that create a perspective, evaluative and obligatory dimension to the social context. This pillar revolves around values and norms. Values are seen through a lens of a construction of standards that represents the normative band of behaviours, and they are expressed as what is preferred or desirable in that context. Norms dictate how things should be done by defining acceptable means to achieve a valued end. Normative systems are both constraining and liberating. They impose limits on social behaviour while serving as a vehicle to enable social action. The normative system is governed not by coercive power as with the regulative pillar but through self-policing and less formal group sanction. Violating social norms often results in shaming and disgrace, while excelling brings pride and honour. The normative pillar is often seen as that which provides stability and acts as the "basis [for] social order."⁵⁰ In SOF, this is why the chain of command often speaks of a self-regulating environment where every actor bears responsibility to correct misalignments when they are seen. This goes to the higher standard of discipline SOF believe they are held to, even if it is manifested outwardly in a different way from conventional forces. Too often, this crucial nuance is ignored as the unsophisticated eye glares at relaxed grooming standards, pointing to those as an indication of poor discipline. The professional reality is quite the opposite because the SOF mission depends on superior discipline.

The cultural-cognitive pillar is about what is right—what is culturally supported within a common frame of acceptability based on a shared understanding or perception of the world. "In the cognitive paradigm, what a creature does is, in large part, a function of the creature's internal representation of its environment."⁵¹ In a nod to Max Weber, Scott notes his claim that action was social only to the extent those involved attached meaning to it. He elaborates saying that individuals, in objective conditions, continuously make subjective decisions based on their interpretation of multiple stimuli bombarding them in a dynamic and ever-changing milieu. Interestingly, Scott attaches a binary aspect to the cultural-cognitive pillar where those who align with the dominant culture are reassured and

confident, whereas those operating outside of it are noticeably regarded as “clueless [or] crazy.”⁵² This binary phenomenon is seen in SOF. The selection of individuals is about the fit. Cultural indoctrination following selection is about the tightness of that fit. Lately, the term *enculturation* is attached to this stage. It is not uncommon in SOF for the vast majority of those selected to remain for many years because they self-actualize in the environment. However, a small number tend to be ejected like a virus relatively early on because they stand out as uniquely incapable of adapting to the environment. It tends to be a binary proposition and underscores why enculturation is so vitally important to SOF. Moreover, it must be tailored to the unique circumstances of the unit involved because the intent is to transmit specific subcultures within an overarching SOF culture that itself nests into a dominant CF culture. Enculturation needs to commence at the beginning to work properly.

As previously mentioned, any institution can be examined solely within one of Scott’s three pillars because to do so is to limit one’s analytical perspective. Assessing the aggregate provides a richer and more meaningful probe. The three pillars paint a mosaic of institutional forces at play, and the interdependencies that exist between them sometimes act in concert and other times pull against each other. The more the three pillars align, the greater the likelihood of institutional success. If one or more is out of phase, an imbalance ensues, making change initiatives difficult to stick or strategies unworkable in the long run. Examining institutions through this framework requires the benefit of time; however, it is something that has been highlighted as a limiting factor when examining CANSOFCOM, which is why we use the USSOCOM experience as a platform. Scott offers a cautionary note to his IA model. It could be that outcomes often appear negative—that the three pillars rarely align. He notes that a high degree of institutional upside exists in contemporary society as social agents militate for enlightened change and progress.⁵³ Before turning to the USSOCOM analysis, we look to the central feature of legitimacy within institutional analysis.

Institutions require more than goals and resources to be viable, they need social acceptability and credibility. “Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definitions.”⁵⁴ Legitimacy is a subjective institutional enabler because it is conferred, reinforced or questioned through the perspectives of different constituencies. This is especially true in the case of SOF generally but CANSOFCOM in particular, because the frame of reference of key leaders is often vague as a function of this relatively nascent capability in Canada’s inventory. Many very senior officers did not “grow up” alongside deployed SOF, which makes it difficult at times to contextualize. A relationship exists between legitimacy and power. The former is reinforced if the institution has access to the latter. Being able to call upon power centres anchors the institution from a social perspective. “A power is legitimate to the degree that, by virtue of the doctrines and norms by which it is justified, the power-holder can call upon sufficient other centres of power, as reserves in case of need, to make his power effective.”⁵⁵

Understanding this relationship allows one to comprehend why questions of structure seem to predominate ongoing CF change initiatives. In military hierarchies, where vertical command and control (C2) systems are sacrosanct, being buried within structure limits the ability to call on other centres of power. The higher one is placed, the more freedom of action they have to exercise this critical franchise to attain and sustain legitimacy in everyone’s eyes. Of course, power in and of itself is never enough. It is only an enabler. Legitimacy begins and ends with legally sanctioned (regulative), morally governed (normative) and culturally supported (cultural-cognitive) actions. This is why SOF must remain very firmly anchored within a dominant CF across all three pillars. Operating beyond these bounds invites a loss of legitimacy, rendering the institution unsustainable in the long run.

We have examined Scott's IA model in the context of what organizations are and how institutions emerge from them. The three pillars allow for a broad appreciation of the institutional forces which are constantly at play in an open system where the environment continuously buffets the institution, framing and reframing perspectives as time marches on. Based on an understanding of the IA model, we can turn to the case study of how USSOCOM came to exist in 1987.

4. The US experience: Creating USSOCOM

This section will dissect USSOCOM's creation using the three pillars of the IA model. The GNA is the seminal piece of legislation that mandated a series of sweeping reforms in the DOD, chief among them the creation of USSOCOM. Before delving into a detailed analysis of that, a series of previous military reforms dating back to 1947 will be mentioned if only to note that substantial change in large military organizations occurs infrequently, but when it does, it tends to be significant.⁵⁶ The creation of USSOCOM is ultimately the story of a struggle for legitimacy. On one hand, there were four independent strong Services seeking to preserve their primacy within a weak central military structure, and on the other, there was a small cabal of political and SOF actors who adamantly held to a view that SOF needed independent standing within DOD to complement national military objectives. In examining the three pillars, we see how this struggle was waged over nearly a decade.

First, we examine the regulative pillar because of its primacy in this case. Ultimately, only regulatory change ordered by civilian authorities could bring about the creation of a unified USSOCOM despite the fact that a general consensus had emerged that it was required in some form. The strong Service culture was too pervasive for uniformed leaders to achieve a USSOCOM-like joint feat internally. The regulative aspect is often more about individuals than collectives, as noted earlier in the paper. In a nod to the works of DiMaggio, Powell and Scott, this section will show how individual actors like Koch, Locher and Cohen forced innovation and strategic action, contributing to major change.

Next, we look at the normative pillar which centres on values and norms. Services felt a social obligation within their own constituencies to resist a joint SOF capability, especially if it was structured with four-star leadership because this would heighten its profile, ergo threat. As the political and backroom military manoeuvring took place, we note a dramatic relationship between the Services (institutions in their own right) and the environment. We will come to see that a joint SOF command was seen as inappropriate in the eyes of some, as it was wholly appropriate in the eyes of others.

Finally, we turn to the cultural-cognitive pillar where it will be shown that USSOCOM was anathema to the military's shared schema that had developed around Service mandates. The absence of a shared world view in the context of the dominant military entities—four strong Services in the Army, Navy, Air Force and Marine Corps—could not account for a standalone SOF capability. Despite obvious operational upside, the creation of joint capabilities posed risk to the status quo and initially would be vehemently resisted as a result.

This section will provide insights into how difficult it was to create USSOCOM within DOD despite several high-profile operational failures that all spoke to the need for greater coherence in the joint-operations spectrum and SOF in particular. This case study will corroborate the institutional resistance to change and uncover the reality that the normative and cultural-cognitive domains would never have permitted USSOCOM's creation were it not for the regulative pillar's legislation which effectively ended the debate by foisting USSOCOM upon DOD. This section will establish the American experience of standing up USSOCOM, which can be instructive to the Canadian experience which will be treated in the next section.

The Department of Defense had seen reforms in the past. Following World War II, the National Security Act of 1947 established the Air Force as a separate Service and created the DOD structure that would largely remain extant into the 1980s. In the 1950s, the civilian component of DOD was centralized to a greater extent, but a major problem persisted whereby strategic planning, FD and combat command were dominated by strong Service interests. In an effort to curb what he saw as unhealthy inter-Service rivalry, too much Service autonomy and wasteful duplication of spending, President Eisenhower implemented the DOD Reorganization Act of 1958. This legislation gave greater powers to the Secretary of Defense (SECDEF) in the hope that a more assertive departmental civilian leader could bring the Services to heel.⁵⁷ From the mid-1960s until GNA, there was little change within DOD. But a number of significant operational failures would change that.

One major event and five significant incidents over a 15-year span culminated with the US Congress coming to view the US military as incapable of adequately prosecuting military operations. Their aggregate effect was that DOD lost its legitimacy. The first and most important was the Vietnam War. The conflict cost the American taxpayer \$150 billion, and the military dropped three times the number of bombs than in both theatres of World War II in a conflict that cost 58,000 American lives as well as two to three million Vietnamese and left the country wracked by devastation.⁵⁸ All this toil was for naught, as America lost to Communist forces in 1975. Aside from obvious American political failings, the military was roundly criticized for effectively having fought three separate wars: one in the jungles, one in the air and the other at sea. Little had been done to develop a coherent joint doctrine to synergize mostly stovepiped effects against a determined enemy.⁵⁹ Vietnam was a watershed event for the US military that saw it lose institutional legitimacy in the eyes of US society. The military had lost its vital connection to American society and its elected representatives. In that sense, it embarked on a journey of malleability, primed to be shaped both internally and externally in an effort to regain its legitimacy in the eyes of American society. Five separate events would add to this fact.

The United States ship *Pueblo*, a US Navy intelligence-gathering ship operating off the North Korean coast in the Sea of Japan, was seized by North Korean forces on 23 January 1968 on the basis that it had entered territorial waters. The 82 surviving crew members from the action were held captive for 11 months, released only once the US issued a written apology for spying. Post-incident investigations revealed that North Korea's intentions were relayed to US military commanders in Japan, but the message was never conveyed downward in the chain of command and ultimately to the *Pueblo*. In 1975, a US-flagged carrier *The Mayaguez* was seized by Khmer Rouge guerrillas off the Cambodian coast. A US Marine element sent in to rescue the crew suffered heavy casualties and failed in their mission, as the crew had long since been moved. More to the point, all US intra-theatre communications outlining the plan between various Services was sent in clear on high frequency radio nets. As a result, the Khmer Rouge waited in ambush aboard the ship, downing three helicopters and damaging three more in thwarting the assault. Again, inter-service interoperability was found severely wanting.⁶⁰

Perhaps the highest profile operational failure of this era was the 24 April 1980 Operation EAGLE CLAW, designed to rescue American hostages held in Tehran, Iran. The Pentagon designed an exceedingly elaborate plan that incorporated every Service. Due to an over-emphasis on operational security, the task force never rehearsed as a full mission package. Doing so would have revealed the fact that radio systems used by constituent elements were incompatible. Seven brave servicemen died in what was widely viewed as an abysmal joint military failure that tarnished America's foreign policy prestige. The Beirut terrorist bombing of the Marine Corps Barracks in October 1983 revealed troubling C2 fissures. While the Marine Corps generated and subsequently sustained the deployed force,

they were force employed through Commander Sixth Fleet to the Commander-in-Chief European Command who ultimately reported to Strategic Allied Commander Europe. Had the command relationships been clearer, it is likely that better intelligence and security information would have been available for key operational decision makers to allow for adjustments to be made on the ground. Senior commanders in Europe were focused on the Cold War and not small entanglements like the Beirut deployment. The final example is the Grenada invasion, Operation URGENT FURY, designed to rescue American medical students in October 1983. While the operation itself was largely successful, it was discovered that Army units ashore could not communicate requests for naval gunfire because shore-to-ship systems were incompatible. Secretary of Defense James Schlesinger perhaps said it best in summing up the totality of these various failings:

In the absence of structural reform I fear that we shall obtain less than is attainable from our expenditures and from our forces. Sound structure will permit the release of energies and of imagination now unduly constrained by the existing arrangements. Without such reform, I fear the United States will obtain neither the best military advice nor the effective execution of military plans, nor the provision of military capabilities commensurate with the fiscal resources provided, nor the most advantageous deterrence and defence posture available for the nation.⁶¹

Beyond losing legitimacy in the public's eyes, the totality of these isolated failures created a belief in the minds of US legislators that DOD was broken. It was an overly expensive, stove-piped, under-performing collection of Services. The two main critiques were that Service chiefs had co-opted everything below SECDEF and that the commanders-in-chief (CINCs) in the field were mini armies, navies and air forces, beholden to the desires of their Service chiefs.⁶² The HASC became engaged in 1982 with hearings "intended to strengthen the authority of central military institutions within DOD, particularly the powers of elements seen as divorced in some way from the Services ...".⁶³ The question was no longer if reform was needed. Rather, it was to what extent the inevitable reforms would reshape DOD.

At this time, US special operations were in a period of abject crisis. Post-Vietnam resource cuts witnessed a 95 per cent reduction in SOF funding and a 70 per cent manpower decline. The Army contracted from seven special-forces groups to three, the Air Force ceased funding for AC-130 Gunships in 1979 and the Chief of Naval Operations recommended in 1975 the dismantling of all SEAL (Sea, Air, Land) teams or moving them into the Reserve Force. SOF was a "graveyard of careers"⁶⁴ and on the path to becoming relegated to history as a bona fide military capability.

Regulative pillar

In the immediate aftermath of EAGLE CLAW, the DOD ordered a commission to examine shortcomings. The Holloway Commission's findings resulted in the creation of a counterterrorist joint task force (CTJTF) and a Special Operations Advisory Panel within DOD.⁶⁵ Not satisfied that this construct would resolve the underlying issues, Army Chief of Staff General Edward C. "Shy" Meyer pushed for further joint integration of SOF capabilities. While unsuccessful, he did consolidate Army SOF elements under one unified command, the 1st Special Operations Command, in 1982. But this was an ad hoc effort within one Service. At this stage, SOF leaders were marshalling their intellectual energies behind the scenes and decided that the only route to success was to pressure the Pentagon from the top down. They drew on the support of Noel Koch, Principal Deputy Assistant Secretary of Defense for International Security Affairs, one of very few pro-SOF voices within DOD. He characterized the situation in a 1984 speech:

I have discovered in critical areas of the Pentagon, on the subject of special operations forces revitalization, that when they (officials there) say no, they mean no; when they say maybe, they mean no; when they say yes, they mean no, and if they meant anything but no, they wouldn't be there.⁶⁶

Koch's voice was not sufficient. He lacked general- and flag-officer heft within DOD. To overcome this deficiency, he set conditions for a Special Operations Policy Advisory Group (SOPAG) to report directly to SECDEF.⁶⁷ The aim of this collective of retired general and flag officers was to bolster Koch's case for legislative reform, and their weapon was institutional credibility. They set about marshalling their case. One key report, written over the 1983–1985 period by Senate Armed Services Committee professional staffer James Locher proved instrumental in laying further legislative groundwork. The Locher Report, *Defence Organization: The Need for Change*, identified 16 problem areas and proposed 91 corrective actions that sought to remedy institutional shortcomings. His main conclusions on SOF revealed the following:

- Conventional forces do not focus on typical SOF threats (CT, insurgencies, etc.).
- Conventional forces focus on high-intensity threats upon which resource programs are justified, and SOF never rise high enough to meet the funding test, so they always reside “below the red line.”
- Innovative defence thinking was required to deal with low-intensity conflict threats to national security.⁶⁸

Through 1983, it was becoming clear to DOD that legislators on Capital Hill would not abandon the issue, due in large measure to SOPAG's work behind the scenes. To stave them off, DOD created the Joint Special Operations Agency on 1 January 1984. This pre-emptive attempt to accede militarily to policymaker concerns lacked the fundamental quality of command authority over SOF. Accordingly, it had no impact on SOF policies, capabilities or readiness, which remained decentralized under Service chiefs. It was an impotent half measure at best. Throughout this period, SOPAG members and select other serving SOF leaders appealed to House and Senate leaders mobilizing, among others, Senator William Cohen. This was reinforced through a vigorous publication and media campaign and culminated in June 1986 with Bill HR 5109 to create a National Special Operations Agency (NSOA). After a period of back and forth between legislators and DOD, the House and Senate passed SOF reform bills in October 1986 which called for a unified four-star command for all SOF, an Assistant Secretary of Defence for Special Operations and Low Intensity Conflict (ASD SO/LIC), a coordinating board for low-intensity conflict within the National Security Council and a new major force programme (MFP-11), commonly known as the “SOF chequebook.”⁶⁹ Encompassing the policy and resource dimensions, this bill had all the necessary ingredients to succeed.

The GNA set conditions for USSOCOM to be formally established on 1 June 1987, but a more detailed look at some of its ramifications beyond SOF are also instructive. At its foundational level, GNA altered relationships and power centres. It increased civilian control over Service budgets by empowering Service secretaries, and it greatly heightened the power of the Chairman of the Joint Chiefs of Staff (CJCS). For the first time, the CJCS had full control of the Joint Staff, had the mandate to develop strategic plans and was enshrined as the dominant military leader with a say into resource allocations to the Services. The GNA also made the CJCS the principal military advisor to the President. It also made tours of duty in joint headquarters essential to career progression.⁷⁰ All of this came to some degree at the expense of the four Services.

Without regulative change in the US military context, substantive reforms are unlikely to occur.⁷¹ A contemporary anecdote supports this claim. In 2009, Commander USSOCOM, Admiral Eric Olson moved to gain more control over career management policies of personnel in his command in order to better align personnel readiness from the Services to USSOCOM. He wrote SECDEF that “modifications to Title X ... are necessary to codify SOCOM authority as it relates to the personnel management of SOF.”⁷² The four Service chiefs banded together, “non-concurring” with Olson’s proposal, and went as far as sending a “16-star letter” to Representative Ike Skelton on the HASC. The CJCS, Admiral Mullen, reportedly agreed with Olson’s request but felt other avenues should be explored short of changing Title X legislation.⁷³ One of the staunchest critics was the Air Force Chief of Staff General Norton Schwartz, himself a seasoned former Air Force Special Operations Command (AFSOC) veteran. This example is illustrative of ongoing frictions. One plausible explanation for this revolves around the power dynamic.

Power is legitimized to the extent that power holders could call on other centres of power to achieve their objectives. In this sense, the Services may have perceived Olson’s request as a delegitimization of their own organizations—a “you win therefore I lose” proposition despite the reality that better policy authority alignment under USSOCOM made sense. Moreover, their ability to effectively veto Olson’s request validated their legitimacy as powerful constituencies. Power, and the ability to exercise it, is a form of legitimacy unto itself. Banding together as they did was perhaps the Service chiefs way of expressing that USSOCOM needed to remain within its box, and it was clearly a position on which the CJCS was not prepared to expend personal political capital.⁷⁴ An obvious solution had fallen victim to institutional undercurrents.

Analysis of the regulative pillar has demonstrated that individual actors played a key role in advancing the case for USSOCOM, leading to its creation in 1987. On 1 June of that year, USSOCOM gained institutional legitimacy as a four-star command within DOD because the law made it so. The GNA formed the basis of its legitimacy, but that was simply the legitimization journey’s start point. This case study offered one modest example of a failed initiative by the Service chiefs to preserve and maintain the institution moving forward. Why it failed is as much about competing interests, agency, power and perceptions, either overtly expressed or existing as a subtext, as anything else. To better understand why this is requires a look at the normative and cultural-cognitive pillars. Next, we turn to the former.

Normative pillar

According to Scott, this pillar centres on the prescriptive and evaluative obligatory dimension to social life. It is difficult to extract specific analytics regarding USSOCOM in this pillar. To the extent that it gives rise to the roles of various actors, GNA clearly ascribed FD and FG roles in its vision of USSOCOM. This included aligning the leadership, resources and authorities under a unified functional commander to achieve government policy objectives. USSOCOM’s duties to the nation were to be carved out of Service structures and mandates. This first stage of the institutionalization process—the creation of a formal structure with explicit goals, rules and coordinating mechanisms—would occur beginning in June 1987, but the second stage, or thickening, would take much longer. USSOCOM began from a “cold start”; ergo, it had little organic legitimacy or specific differentiation. In short, it would struggle for several years to become part of the meshed fabric of DOD as an institution in its own right.

In this case study, the instructive normative analysis must be viewed from the top of the military structure. Prior to the GNA, the four Services were the dominant forces within the Joint Staff.⁷⁵ The critique was not that the Services were infighting but, rather, that they were colluding, or logrolling the process, to divvy up the pie.⁷⁶ They had essentially dominated the agenda for thirty plus years, sitting at the pinnacle of Service decision making—individually and collectively—ensuring that joint advice was in their favour. An impotent CJCS was unable to influence this process. By the early 1980s, the Service chiefs had grown up their entire careers within this paradigm. That would all change under a GNA-reformed DOD:

GNA specifically addressed the relationship of the CINCs to the Service Chiefs and that of the combatant commands to the individual Services. Although GNA allowed the Services to continue their missions of organizing, training and equipping forces for the CINCs, the legislation charged the Service secretaries to assign the CINCs all forces that perform their assigned missions. In addition, it specified that all forces operating within a geographic area assigned to a CINC must be assigned to and under the command of that CINC.⁷⁷

The significance of this quote is in how it relates to norms that had become custom within the Services. The chiefs had directly or indirectly controlled virtually every aspect along the FD, FG and FE continuum until GNA. They had come to see their roles as defined by these broad powers. Their “social positions” came with a set of normative powers that became licence and which the GNA was purporting to break down considerably. This normative conception would have extended well below the four-star level into subordinate Service commands and staffs. The Navy was particularly dogmatic on this issue, as they had been an independent Service since the mid-18th century. Superimpose on this a general “distrust” of all special-forces issues, including operator and missions. This attitude pervaded even the most even-keeled strategic generals like Colin Powell, ironically the CJCS who would implement much of the GNA change agenda:

He [Powell] had always had an ominous feeling about Special Forces; there was bad blood running through their veins that addicted them to ad hoc operations. He considered them self-important cowboys who threw tried-and-true military doctrine to the wind, opening the door to catastrophic failure.⁷⁸

Clearly, SOF lacked military virtue, and by extension legitimacy, in Powell’s view. Very few senior serving leaders were prepared to depart from the status quo, but one example of the power and influence of one leader who was notable. It was common for CJCS’ to leave office feeling they had been minimized in their crowning portfolio, and General David C. Jones was no different. In 1982, he penned an article for the *Armed Forces Journal International* entitled, “Why the Joint Chiefs of Staff Must Change.” However, it was only when the Army Chief of Staff, General Edward “Shy” Meyer, weighed in one month after the CJCS’ article appeared that widespread support began to grow.⁷⁹ What would explain this shift in support?

Paradoxically, the nation’s most senior military officer, the CJCS, had less institutional credibility on the issue, likely because he had less to lose in the debate. His network ties extended laterally and upward, whereas Meyer’s network as the Army’s Chief of Staff had strength downward. He was the nation’s top Army officer. In supporting Jones’ article, Meyer positioned himself as a self-appointed arbiter reframing the debate. His gravitas weakened internal voices of dissent rooted in parochialism and elevated the debate to a more substantive level. His perspective was then “habitualized and

reciprocally interpreted”⁸⁰ within the Service over time. In short, he undertook a personal estimate and concluded his appropriate role, given the situation, was to speak out, regardless of extant social expectations held by the majority:

The success of an institutionalization project and the form that the resulting institution takes depends on the relative power of the actors who support, oppose or otherwise strive to influence it. ... [I]nstitutionalization as a *process* is profoundly political and reflects the relative power of organized interests and the actors who mobilize around them.⁸¹ [emphasis in original]

The Meyer example goes some distance to proving that individual senior institutional leaders can have an effect out of all proportion to other actors and reflects an agent-based view of institutionalization. What Service chiefs think matters a great deal. It also reflects the structural inability of institutional leaders to separate themselves from politics because the military-strategic level necessarily intersects with the political one.

The normative pillar as it relates to professional military forces speaks to the issue of nobility. It is rooted from the time when Westphalian politics transformed armed gangs under the control of medieval lords into disciplined tools of the State, rendering the military enterprise a noble one. Military ideals became those of the State itself. And because State leaders needed to remain legitimate in order to retain power, militaries implicitly understood that their legitimacy was the *prima facie* ingredient to the long-run success of their institution. The current US CJCS, Admiral Mike Mullen, reinforced this element at a recent speech to the 2011 graduating class at West Point where he stated, “So it is not enough today that we deploy. It is not enough today that we fight. It is not enough today that we serve, unless we serve also the greater cause of American self-government and everything that underpins it.”⁸²

But SOF, a relatively recent military capability development of the 20th century, somehow seemed at odds with this notion of nobility to the extent that their organization, tactics and normative operating methods differed from the mainstream. Indeed, SOF derived many of its strengths because of these differences. Being seen as distinct from the conventional force was akin to being seen as bad, possessing a roguish disregard for the totems, mores and ways of doing business associated with a noble soldier’s profession. To some extent, such attitudes persist in certain quarters even today. This compels SOF leaders to sometimes go too far in addressing this perception by becoming pseudo-apologists for the fact that SOF is uniquely different in many ways. This contributes to breeding an element of internal insecurity within SOF, as they are constantly forced to contend with a duality of military relationships: one as a SOF member in the military and the other as a military member who also does the SOF thing from time to time. SOF officers and senior enlisted leaders must be like chimeras—with one strand of their DNA rooted in conventional military affairs and the other as a SOF operator. It is in this light that Meyer’s actions are important because he lent an air of nobility to their enterprise. Not wishing to overstate the significance of his actions, it was clear from this point forward that the normative pillar was gradually beginning to align with where GNA legislation was being steered on Capitol Hill. It would seem that the inevitability of major change toward a more joint US DOD was becoming clear to all concerned on a normative level.

Cultural-cognitive pillar

This pillar defines the lens through which actors view events and much has already been stated on the fact that a strong Service culture predominated when GNA was being considered. The culturally supported viewpoint favoured a federated model of power in the hands of four men vice a strong,

central leadership with decentralized joint forces under unified combatant commanders (UCCs). But there were two other constituencies outside the military similarly concerned. The first were liberal groups afraid that a centrally controlled military would create a Prussian-like general staff that would lead to greater militarism in the national psyche. The second were Congressional groups who saw military centralization as a greater concentration of power within the Executive Branch and, therefore, an impediment to their ability to influence military affairs.⁸³ While uniformed officers did not have a monopoly on what they felt was right and culturally supportable, they represented a major constituency.

Perhaps the best reason to explain the reluctance to embrace the joint force needed to meet contemporary and future challenges lies with the concept of legitimacy itself. Scott ascribes an organizational form as “legitimate” to the extent that the relevant actors deem it as a natural way to organize for a specific purpose.⁸⁴ The changes envisioned by GNA were distinctly unnatural to conventional Service thinking at a time when the Cold War still dominated the operating environment. One example stands out. In the lead up to Gulf War 1, Marine Corps Commandant, General Al Gray, lobbied Commander, Central Command (CENTCOM) Norman Schwarzkopf to incorporate a classic Marine force amphibious landing through heavily mined waters into Kuwait City as part of the deliberate plan. Rebuffed by Schwarzkopf, Gray went directly to the CJCS, General Colin Powell, who also denied the appeal. In a pre-GNA DOD, it is highly likely this Service chief would have won his case. General Gray had proposed a historically doctrinal action, the amphibious assault, in part because it was what defined the Marine Corps. For Gray, it was anathema that the Marines would pass on an opportunity to boldly leverage a coastline within an area of operations to deliver kinetic effects from the sea. But in the context of a joint campaign in Gulf War 1, the first true information war,⁸⁵ such a manoeuvre would likely have exacted a heavy American human toll for dubious military advantage. Service chiefs, and indeed large segments of their social network, had yet to embrace a new joint warfighting schema—not one that superimposed Service effects onto a campaign plan but, rather, one that integrated the most appropriate capabilities from a vast spectrum of capabilities under a unified C2 structure. The paradigm had shifted. The calculus was to be the inverse of what had happened for EAGLE CLAW. Many in the Services saw this as an illegitimate use of their capabilities.

What does the cultural-cognitive pillar tell us about USSOCOM? There were many issues post GNA in implementing USSOCOM. The first was in assigning forces. The Navy refused to relinquish SEAL teams assigned to the Pacific and Atlantic fleets, forcing the first USSOCOM CINC, General Lindsay, to appeal to SECDEF Weinberger. The Army took a full 18 months before relinquishing Civil Affairs and Psychological Operations elements to USSOCOM. From a resource perspective, Deputy SECDEF issued a memorandum on 27 March 1987 for Services to identify funds for MFP-11 (SOF’s chequebook), but it left these same funds under Service control. Structurally, USSOCOM headquarters (HQ) had no staff and precious little experience. In the final analysis, General Meyer’s quote sums up USSOCOM’s early days: “There is this continued undercurrent in DOD with regard to resources that will destroy United States Special Operations Command (USSOCOM). If the command has to go to Congress every time and fight the resource problem ... to reverse those resource decisions taken by DOD, the Command will never survive.”⁸⁶ It was not until Congress intervened with the National Defence Authorization Act 1988 (Public Law 100-180) directing that SECDEF shall provide sufficient resources to CINC USSOCOM that the tide began to shift. On 28 September 1988, a frustrated Senate Armed Services Committee Chairman Sam Nunn directed that USSOCOM be “staffed with sufficient personnel with the right skills to carry out its Congressionally mandated budget responsibilities.”⁸⁷

Attempting to understand why underlying forces would resist GNA's reforms after no less than six significant military failures in the decades leading up to 1986 is a paradox in itself. Seasoned and intelligent military officers must have known joint operations were a *prima facie* requirement to successful outcomes moving forward? The answer is yes, but no. Did these military professionals recognize the objective conditions necessitating wholesale change? Of course they must have. One could not rationalize Beirut, Vietnam or Operation EAGLE CLAW as anything but failures, nor could one deny the legislative imperative. But were their subjective interpretations of the totality of the reforms aligned with this objective reality? The answer is likely, no. The reason lies in the process of schema building. Decades of educational and experiential information was encoded, retained, organized, later retrieved and subsequently reinterpreted in a contemporary contextual setting by individuals within a social network.⁸⁸ An emergent USSOCOM at the expense of little segments of the four Services was not processed as a correct linear reality to the institution that was DOD. According to Berger and Kellner: "Every human institution is, as it were, a sedimentation of meanings or, to vary the image, a crystallization of meanings in objective form."⁸⁹

The very wording in this quote infers a fossilization of culturally supportable constructs which take time to change. In this sense, it is reasonable to conclude that the cultural-cognitive pillar is likely the most resistant to change. This pillar is hard to alter because institutionally it lives largely within informal structures. Informal structures cannot be mandated or legislated to change. Moreover, large complex bureaucracies do not adapt well to significant procedural change. This problem is exacerbated in a military context where conservatism and tradition matter. Bold change is often dangerous change in military affairs where leaders, especially in this Cold War era, were taught the value of large set-piece manoeuvre. The fact that the cultural-cognitive pillar is the hardest to alter reinforces why it is so essential to get it right in the first instance, especially in a young command.

Concluding comments on USSOCOM's creation

Examining USSOCOM's evolution in the context of GNA offers some interesting conclusions. First, USSOCOM came into being as a result of highly committed individual actors. Whether they were staffers like Locher, mid-level leaders like Koch, generals like Meyer and Wilson or elected leaders like Goldwater, Nicholls, Nunn, Cohen and Daniel, each of these people was a key element in an integrated whole that set conditions for GNA to be brought into force. Returning to an agent-based perspective, the work of legendary management scholar Henry Mintzberg categorized a manager's (*leader* in the context of his offering) roles as threefold: interpersonal, informational and decisional. Respectively, a manager is a figurehead/leader, environmental barometer and disturbance handler.⁹⁰ The analysis of institutional leaders within DOD has demonstrated the preponderance of Service chiefs employed strategies ranging between avoidance and defiance. These appear as poor choices, misaligned as they are with Mintzberg's principles. But at least one, General Meyer, used a combination of manipulation, compromise and acquiescence to tremendous effect. He initially attempted to placate concerns by establishing interim Army SOF structures and then turned to positively influence perspectives by lending his legitimacy to the contours of emerging GNA reform. Finally, he helped establish a groundswell of normative and cultural-cognitive support for acquiescence to take hold, which led to conformity with the regulations. It seems that he effectively read the environment and used appropriate strategic choices to effect progressive change.

The obvious takeaway is that GNA required civilian intervention and subsequent oversight to bring USSOCOM to life. This was not simply to overcome internal DOD tensions but mainly because SOF draws a great deal of its legitimacy from civilian leadership. Military organizations have been described as "perfect bureaucracies" for their hierarchical structure, coercive power and slavish attention to procedural detail as a function of their core technical business lines.⁹¹ Militaries don't change easily.

Defined by management scholar Mintzberg as “missionary organizations” whose ideologies (or cultures) are richly developed over time and have very deeply rooted values and beliefs, DOD was subject to much internecine political combat.⁹² Because of this, and as a function of US political organization, civilian political leaders were the only vehicle to implement something of GNA’s magnitude. Indeed, as we have seen, even once signed into law, they had to redouble their orders to ensure effective implementation. The latter observation bleeds into the next: skilful political manoeuvring by key constituencies was essential. A campaign plan of sorts, with decisive points as intermediate objectives undertaken by specific actors, was required over a decade to realize USSOCOM’s creation. There was much gamesmanship on both sides of the debate, some overt but with much reserved for backrooms.

The overarching deduction in analysing USSOCOM’s creation is that the regulatory pillar was the essential first step to establishing the first stages of organizational legitimacy. This regrouped extant, disparately organized special-forces capabilities but, more so, transformed the broader institution because of massive and systemic DOD-level organizational dysfunction that had little to do with SOF per se. The normative pillar was vital to the extent a handful of leaders mobilized to action on the basis that a unified USSOCOM was the right thing to do for DOD. These key actors felt a social obligation toward the appropriateness of establishing this capability, even if that meant personal risk to their reputations and credibility in the process. The author submits that rare are the people who would do such a thing. These men saw “nobility” in the SOF cause. Their character speaks volumes and likely had the added effect of conferring upon their crusade a degree of individual and collective legitimacy necessary to realize this ambitious endeavour.

Finally, the cultural-cognitive pillar would grow over time, nurtured as it was by certain early events. Key leadership’s endorsement of the reform was crucial as it opened the cultural aperture to accept an emergent institution. The author submits that a cultural tipping point is necessary, shortly (in a relative, strategic sense) after initial legitimacy is conferred. This is necessary to cement a positive script to build upon. Two short years following USSOCOM’s stand-up, Operation JUST CAUSE in Panama was executed. It was an unqualified joint success with SOF elements playing a decisive albeit not widely publicized role. Just two years later, US SOF elements would be ordered into battle again, this time largely in Iraq’s western desert hunting mobile scud missile launchers during Gulf War 1. Their daring and competence served a vital strategic role by shielding Israel from Saddam Hussein’s nuisance missile raids. SOF’s success was instrumental in keeping Israel out of the fray, thereby maintaining coalition integrity, especially among Muslim nations. Even a sceptical General Schwarzkopf later admitted that his affection for SOF had grown as a result. These two “early wins” provided a cultural-cognitive tipping point toward establishing a culturally supportable perspective of SOF specifically and USSOCOM generally. Finally, the GNA provisions attaching primacy to joint tours of duty and professional military education ensured long-run success by opening military officers up to the joint experience.

5. Takeaways for CANSOFCOM

Scott’s IA model in the context of USSOCOM’s creation has shown us why seemingly logical choices were not adopted by DOD. Complicated underlying institutional forces pushing toward and pulling against each other were at the root of this discontinuity where people, structure and process collided in a messy mosaic of interests. It is against this backdrop that this section seeks to extract some meaning as to what this portends for CANSOFCOM. The political nature, scale and context of the American experience are sufficiently distinct that linear correlations between USSOCOM and CANSOFCOM are both unwise and unrealistic. But the narrative of an emerging special forces within a wider military organization is instructive.

This section presents a series of observations, mainly in two groups: external and internal. It then addresses the institutional CANSOFCOM leader's role as the officer who gives form and substance to CANSOFCOM's objectives. In sum, these observations are all important, but the hypothesis will emerge that the most important job revolves around internal consolidation. In so doing, this will create unassailable conditions to secure the long-run legitimacy that is essential to sustaining the command.

External to CANSOFCOM

The external environment is critical because of its constant influence on suborganizations within the GC, DND and CF. One must never lose sight of the social dimension to military affairs in Canada which drives so much of the political imperative. Staying grounded within the Canadian social fabric is, therefore, of the essence. This leads to a healthy respect of the primacy of policy in military affairs. Policy drives operations—something that is at the core of the instrument of military power in healthy Western democracies. The best performing subelements of the institution need more than objectively successful operational outputs to be sustainable in the long run. This is not enough. They require legitimacy, and this takes effort and time to cultivate. In other words, CANSOFCOM needs to be more than operationally effective. It needs to be branded and widely accepted as an indispensable part of the wider defence and security institutions. It needs to expand its power base as well as its access to other centres of power.

Half a decade old, CANSOFCOM must undertake the transition from an organization toward becoming an institution. When the Minister of National Defence (MND) signed the Ministerial Organization Order bringing the command into the CF's order of battle effective 1 February 2006, CANSOFCOM was accorded the formal authorities, structures and communication channels necessary to undertake its mandate. The task now is to "thicken" itself institutionally by bringing definition and texture to its differentiation from other elements of the CF and fidelity to how it nests within a wider CF/DND and GC national-security apparatus. In establishing and consolidating its power centres, administrative rituals, ideologies, unifying objectives, rituals, totems and more, it will intensify what Scott refers to as its "purposiveness." This will anchor CANSOFCOM within wider structures and social milieu.⁹³ To do this, CANSOFCOM can attest to being one of the most positive outcomes of General Hillier's CF transformation efforts. In barely half a decade, it has taken certain mature SOF organizations under its control, created yet others and unified all these elements, delivering integrated special-forces effects in Afghanistan and elsewhere. This significant feat can be leveraged to good use as a harbinger of its vast untapped potential moving ahead. That it was able to accomplish so much in times of perpetual conflict in South West Asia suggests strongly there is much unexploited upside. But the question is how to start? Strategic communication is defined as:

A systemic series of sustained and coherent activities, conducted across strategic, operational and tactical levels, that enables understanding of target audiences, identifies effective conduits, and develops and promotes ideas and opinions through those conduits to promote and sustain particular types of behaviour.⁹⁴

Strategic communication is thus a paradigm linking information and perceptions whereas strategic communications is "the process and sequencing of information for carefully targeted audiences."⁹⁵ The former is the what, the latter being the how. And effective strategic communication goes to the very heart of legitimacy, as clearly articulated in the United States Air Force's strategic public-affairs plan. It states, "our institutional reputation depends on our ability to create and foster a positive image."⁹⁶

The author would argue the central role of strategic communication in contemporary military affairs is undervalued by today's leaders. A separate directed research paper on this topic alone would only scratch the surface of this crucial subject matter, but for the purposes of this paper, it suffices to say that senior leaders intuitively understand we must "connect with Canadians," but there is both little apparent substance to anchor this in strategy as well as a wider military culture which prefers all things operational. To effectively yield the benefits that strategic communication can derive requires far greater levels of sophistication than we witness in today's environment. Undertaking this otherwise is to leave outcomes to chance. CANSOFCOM should invest in developing a coherent strategic communication approach, without which it will remain underrepresented surrounded by three dominant environments that possess significant institutional profiles, each in their own right. This is not to advocate a competitive approach, however.

The process begins by identifying the problem space one seeks to influence and disaggregating it into constituent parts that are interconnected to the whole. A target audience analysis would then be undertaken to ascertain appropriate audiences and what processes are best suited to informing them.⁹⁷ By defining CANSOFCOM's strategic objectives and interests within its environment and mapping these against key stakeholder constituencies and opportunities, a clearer sense emerges of where strengths and opportunities lie, where weaknesses and threats lurk. The path to realizing this undertaking is not an easy one. It requires extensive consultation and debate internal to the command, in addition to outside expertise in strategic communications and marketing in order to flesh out this paradigm beyond traditional military thinking. Once defined internally, it needs to be coordinated and to some extent deconflicted with extant CF and DND initiatives, like the Global Engagement Strategy. To achieve this, extensive consultation with the chain of command and key functional authorities like Assistant Deputy Minister (Public Affairs) is necessary. Even the process would be beneficial by drawing in leaders and stakeholders around a substantive SOF dialogue.

Strategic communication is all too often an afterthought to issues perceived to revolve around operational primacy. Core business, and all activities in direct support of such outputs, tends to consume the limited time leaders have to contemplate issues. This approach lacks sophistication. A willingness to operate in the high-value margins of the environment which affects institutions is essential. CANSOFCOM's environment extends far beyond the CF and DND. Appreciating the direct correlation between how Canadian society perceives it and the effect this perception has on our elected officials is of the essence. Taken internationally, the views of allied military leadership vis-à-vis CANSOFCOM contribute directly to its potential to assume key roles and responsibilities in coalition and combined contexts. If efforts are taken to enhance these perceptions, it ultimately creates greater options for military and civilian leadership. Strategic communication is not an adjunct to CANSOFCOM's sustainable development. It is an essential ingredient to institutional thickening and long-run legitimacy.

CANSOFCOM must be, *and be seen to be*, a key contributing partner across the defence and security domains. As a command, it must add value to CF outputs beyond being a niche capability to the overall portfolio. The perspective of its contributions must be more nuanced than that. Firstly, CANSOFCOM must enable the CF by providing effects that either no one else in the CF can offer or that others might offer but not to the degree of precision that CANSOFCOM can. Reliability and accountability must be its hallmarks in this regard. It must not over-promise on what it can do, but it must always over-deliver on advertised results. Secondly, CANSOFCOM must add value to the three environments.⁹⁸ More will be said on interdependencies in the next subsection, but there is a net benefit for the CF to have "a little more CANSOFCOM" in it. The evolving contemporary

operating environment (COE) and future security environment (FSE) portend toward increasingly complex operating environments where personnel and technology merge with a further distribution of units of action in non-linear operating environments. SOF are uniquely adapted to such environments where their ruthless mission focus, advanced dismounted tactics, techniques and procedures, and technological overmatch render the asymmetric battlespace more symmetric. SOF is expert in entering enemy decision-action loops as opposed to being on the receiving end of enemy initiative. Given the departure from industrial warfare employing large-scale military manoeuvre, it is only reasonable to conclude that SOF has something valuable to add to environment portfolios.

The benefits will often manifest themselves in the less formal domains, where low-level interactions breed shared confidence and mutually reinforcing support within informal power structures. Thirdly, CANSOFCOM has a role in adding value to a 21st-century national-security network. This begins with decisive personal engagement by senior leaders in order to establish a shared understanding of interorganizational strengths, frictions and limitations. Special-operations officers and senior enlisted leaders are particularly adept at dealing with non-military constituencies because they have refined this skill set over a career, doing so domestically and abroad. Individually, these personnel are bred to view issues beyond the military perspective. Organizationally, CANSOFCOM can increasingly contribute to global command, control, computers, communications, intelligence, surveillance and reconnaissance (C4ISR) activities where the exigent requirement for competent politically informed military advice exists in order to allow senior leaders to make wise choices under highly dynamic conditions. Beyond that, CANSOFCOM possesses expertise that synergizes very well with other national-security partners in the communications and intelligence domains. The addition of SOF allows the GC a broader cross section of capabilities which can be task-tailored for greater freedom of action to see, recognize and exploit opportunities earlier than ever before. The secret rests in streamlined reporting and decision-making structures that take advantage of these tools, but further analysis of this facet is outside the scope of this paper. Suffice it to say, CANSOFCOM has a responsibility to spread its excellence far and wide, and doing so will enhance not only its credibility and legitimacy but also itself, in the process. By actively engaging, it confers “nobility” onto itself as warriors who selflessly achieve the highest order of professional military excellence in the eyes of others. This also militates directly against the myths of a rogue force populated by blood-thirsty killers.⁹⁹

A word of caution on the issue of overspecialization is warranted. This should be avoided as a function of relevance and value added. Possessing a tool that is unique and specialized to the point of requiring near perfect conditions to employ is one that is pointless to maintain. Such a tool would not survive cyclical long-run institutional resource pressures. CANSOFCOM must celebrate its uniqueness but temper this within a “specialized SOF generalist” approach to core tradecraft within its units. Moreover, its leaders must avoid being overly doctrinaire on the issue of employing SOF. The fundamentals must be safeguarded, but there is plenty of scope beyond doctrinal vital ground to employ SOF.¹⁰⁰

Concerns from some quarters have been voiced in the past to the effect that SOF operations are too secretive and, as a result, lack oversight and accountability. I have personally argued to a Member of Parliament that the basic premise of this allegation is flawed. Is there an extraordinary degree of security around SOF operations? Yes, operations security is the lifeblood of successful missions. Does this equate to little or no oversight and accountability? The answer is unequivocally no. The Canadian experience would illustrate much, much higher levels of oversight than commensurately sized or ranked conventional forces. That said, the essence of the concerns about transparency and visibility should not be minimized. Quite the opposite, they should be addressed, and

CANSOFCOM has a leadership role to play in that regard. A professional discussion should occur where lessons, investigations and observations of the past are internalized in the context of contemporary structures and reporting relationships in order to determine if the extant balance is correct. Do the right leaders at various levels of the institution and government have access to the correct information? Clearly, such an endeavour carries risk. Nothing that violates the operational integrity of CANSOFCOM would be acceptable, but the sense is there is considerable room to manoeuvre while fully preserving the integrity of the military chain of command. It is worth noting, too, that in the absence of any information, people's minds venture to dark places; therefore, CANSOFCOM's wider communications approach must account for this reality.

Academia has a role to play in thickening CANSOFCOM's brand as well. Canadian military professionals do not write enough as a function of probing the institutions' strengths and weaknesses. We should take a page from the US in this regard. American officers tend to voraciously debate their institution at the tip of the pen to great effect. CANSOFCOM should foment a greater culture of introspection among its ranks and leverage the untapped market of brilliant thinkers in Canada, not all of whom support SOF. The stand-up of USSOCOM tells us there is incredible value in framing issues within professional journals. It is hoped that the recent creation of the CANSOFCOM Battle Laboratory within the Canadian Defence Academy under the stewardship of Colonel Bernd Horn will stimulate this point. Having looked at the external environment, we now shift to examining the internal milieu.

Internal to CANSOFCOM

What flows from the external observations are those considerations internal to the command. Interdependencies between the two exist across the regulative, normative and cultural-cognitive domains. So while shaping the internal environment is by no means an easy undertaking, CANSOFCOM's leadership has access to more of the control mechanisms to make a decisive impact here. This subsection will offer a series of observations, all of which are linked to the preceding insights.

CANSOFCOM must continue to embrace a climate fostering cognitive conflict at all levels. Candour is as much a force multiplier as rigour of analysis. In fact, they are mutually supporting. This is especially important if one sees CANSOFCOM as an HRO where margins of error are reduced, tolerances tight and the consequences of failure are high. CANSOFCOM is a small organization whose outputs are often time sensitive in nature. Their ultimate purpose is to address low-probability, high-consequence threats to national security. This heightens the need for agility, quality and responsiveness. There is no "workup" period for special-mission units or high-readiness composite SOTFs. Immediacy of advertised outcomes is assumed. To the extent this "no fail" reality pervades the organization, it is incumbent on all actors to be forthright and honest with their assessments. Being economical with downside information may result in adverse national outcomes. A climate conducive to robust internal debate is one vehicle to guaranteeing all viewpoints are aired and given full consideration prior to a decision being taken. True loyalty to the institutions, in the first instance, means speaking truth to power. As Sir Francis Bacon, the 17th-century philosopher and jurist said to a minister to England's King James: "Remember well the great trust you have undertaken; you are as a continual sentinel, always to stand upon your watch to give [the king] true intelligence. If you flatter him, you betray him."¹⁰¹

Clearly, once the debate is closed, loyalty transitions to fully supporting the selected course of action. Such an environment has a number of secondary positive effects. First, it maximizes the potential of the high-calibre individuals within the command. Second, it fosters buy-in and commitment, as

actors understand they have a role to play in outcomes. Third, it makes the whole much greater than the sum of its parts by acknowledging the power of the network over a set of hierarchical decision makers. All of us tend to be smarter than one of us, as it were. Fourth, SOF operations at the lowest tactical levels tend to carry great risk, and such an approach, all the way to the top of the organization, provides an aligned and common narrative on how things are done in SOF.

CANSOFCOM must decide what type of organization it wants to be, and it should be ever mindful that growth for its own sake is no metric for success. It can only do so by understanding what options are available, what it has morphed into and what its strategic vision calls for. While detailed dissections of various types of organizations are beyond the scope of this paper, it seems that CANSOFCOM has selected a number of characteristics from various models. It is entrepreneurial by dint of its vision and “building” quality as a young organization. It possesses strong leadership but retains a relatively small “head” and flat design with little mid-level bureaucracy. This model’s potential risk area is an imbalance toward operations at the expense of governance and more routine institutional administration.¹⁰²

CANSOFCOM borrows from the Diversified Organization model as well by having diversified, “market-based divisions” (JTF 2, CSOR, CJIRU, 427 SOAS, SOTC and SOSU) run relatively decentralized operations. This model can only work if attendant decision-making power is cascaded downward, to the maximum extent tolerable by the environment. CANSOFCOM further exploits this model in what Mintzberg identified as “related product form” diversification where interdependencies exist between various market divisions.¹⁰³ Depending on the nature of the mission, more than one unit is generally involved in contributing capabilities. This concept blends well with HRO modelling where structures temporarily adapt to best suit the nature of the situation at hand. The benefit to this model is that it distributes risk and minimizes the need for a large headquarters, but its downside is it can be less efficient in some cases by creating certain cross-divisional redundancies. There is a price to doing business effectively from an efficiency perspective.

CANSOFCOM has some visionary organizational model within it to the extent it conforms to a complex adaptive environment with emergent strategies. In that sense, it features more of a fluid adhocracy than a classic military hierarchy, again depending on the nature of the task at hand.¹⁰⁴ The benefit of this model is that it minimizes bureaucratic overhead, but importantly, it can lead to certain social ambiguity for its membership which is particularly relevant in light of Scott’s normative and cultural-cognitive pillars. This is risky. Social actors can feel less secure in this environment because, by definition, it is less predictable. Certain personality types are distinctly uncomfortable in such settings. CANSOFCOM also borrows slightly from the missionary organization which has very rich values and belief systems along with few formal rules (in comparison to conventional military structures). In this model, members feel a tremendous sense of mission.¹⁰⁵ This is powerful yet dangerous, if not carefully checked by leaders at every level, for it can lead to the development of a counter-culture outside the dominant CF culture. Another potential pitfall of borrowing from this model is the desire to standardize norms across the organization. Such normative levelling is operationally and organizationally counterproductive because it agitates against the unique qualities, strengths and tailored culture of each unit. Fair does not always mean equal in the realm of military affairs.

Finally, CANSOFCOM borrows only slightly from the machine organization which has certain highly specialized processes. Where CANSOF departs from the core of this model is that it is not obsessed with control nor are its communication channels calcified along hierarchical lines. That said, this model has significant downside to CANSOFCOM, which it must be attentive

toward. The machine organization is based on a closed system. It seeks to attain autonomy by controlling its environment, growing structure and process to do so. Organizations bent on overcontrolling over time lose sight of their core business and become centred on controlling their internal affairs more than external outputs.¹⁰⁶ It becomes a self-fulfilling prophecy of survival and is a race to the bottom. A specific strength of CANSOF's early career progression model, with JTF 2 operators specifically, was its balance between SOF's needs and interacting with the wider CF community (specifically, the Infantry School and Senior Enlisted Leader's Academy). Moving toward a pan-SOF trade in some ways plays into the machine organization's closed system, one that largely loses touch with its external milieu. It might be that a SOF trade with subspecialties is the correct personnel model, but it is inherently good for CANSOFCOM people to stay closely connected with the CF as they grow within SOF. It is as much to use coursing as a vehicle to expose the CF to SOF quality as it is to have SOF operators refresh their military reference points. SOF operators in a closed system lose crucial perspective, and SOF will always be strongest when it maintains robust connectedness with the wider field force.

CANSOFCOM is at a unique juncture as a command, because its constituent parts are at varying levels of maturity. This presents some realities that might help explain some of the normative and cultural-cognitive frictions bound to arise within any new organization. Before CANSOFCOM, there was JTF 2, established in 1992 and formally stood up on 1 April 1993. As explained earlier, it had nearly a decade of experience before its coming of age after 9/11. It was very successful in Afghanistan, earning the US Presidential Unit Citation in 2006 for operating as part of Task Force K-Bar. As part of its domestic mandate, it had a relationship with B Flight, 427 Squadron (Sqn)—formerly with 450 Sqn until it was stricken from the order of battle in the mid-1990s—and the Joint Nuclear Biological and Radiological Company (JNBC Coy). That meant that at the time of CANSOFCOM's creation, one unit and several components of what would become other CANSOFCOM units, already had SOF experience. I posit that by 2006, JTF 2 had grown beyond the introductory stage and was well within its growth stage, nearing the maturity stage. For their part, HQ CANSOFCOM, CSOR and, for all practical purposes, the Canadian Joint Incident Response Unit were created new in 2006 and are thus in their introductory stage. By nature of military affairs, JTF 2 found itself as one of four units beneath a formation HQ. To set conditions for success, JTF 2 personnel were carefully and deliberately seeded into the HQ, CSOR and CJIRU, but by and large, these units grew from conventional officers and troops. It is logical that JTF 2 found itself as a repository of information and resources in the early years, but deliberate efforts were taken not to simply export JTF 2 practices, resources, methodologies and culture across the entire command. Doing so would have ignored the different missions and roles and blurred long-run differentiation, which was seen as the eventual strength of CANSOFCOM. The point is that CANSOFCOM HQ is growing with units that are generally out of phase with one another. This accounts for the periodic tensions that exist among the different constituencies, often borne as they are from different stages of growth.

Having looked at various facets of different organization models, the author suggests that adaptability and balance are the keys to success in how SOF sees itself organizationally. It is a distinct capability, different than anything else in the CF, albeit not alone in being considerably unique. It needs to remain balanced between innovative and adaptive models but also recognizable to other CF constituencies. To remain viable and legitimate, it must conform to regulative and normative expectations. Above all, CANSOFCOM has to understand why it has morphed into the organization it is and what the strengths and pitfalls of future adaptations are. Because so much of organizational design turns on people, let us briefly look at that dimension.

The CF population can be expressed as a bell curve with the y-axis denoting the number of people (up to 100,000 Regular Force and Reserve Force) and the x-axis, their quality.¹⁰⁷ Units within CANSOFCOM all have tailored selection and coursing requirements which vary from unit to unit. For illustrative purposes, JTF 2 will be used as the example. Whether joining as a supporter, operational supporter or assaulter, every member of the unit is put through screening and a selection of sorts. The supporter is screened, interviewed and chosen from a pool of candidates. Operational supporters are screened and, depending on the specific employment, put through a selection process (or interviewed in some cases) and selected. These individuals then undergo up to one year of job-specific training before integrating into operational subunits. The assaulter is screened, put through a rigorous selection and, if deemed trainable, spends 10 months on the Special Operations Assaulter Course. Overall assaulter attrition runs in the 85 per cent range. In sum, the vast majority of JTF 2's membership is drawn from the right portion of the CF's bell curve in terms of intellectual quotient (IQ), physical quotient (PQ) and irregular warfare quotient (IWQ). Once at the unit, the bell curve is redistributed to resemble the CF graph, but every person in that JTF 2 bell curve is generally a high-achieving individual relative to the CF population. The same general theory applies across CANSOFCOM's units, as they benefit from the ability to screen and select. That is not necessarily the case within CANSOFCOM HQ which is populated in much the same manner as other operational headquarters. This is not to suggest that CANSOFCOM HQ is replete with underachievers. Quite the opposite is true. Conventional CF operations over the past decade reveal strength across the CF continuum. It does, however, inform how the normative and cultural-cognitive pillars come into play, as different constituencies possess different lenses through which they view one another and the overall mission. All wear a tan beret, but some have invested significantly greater commitment and personal risk to attain their post within the command. To ignore this reality is to be surprised that intra-organizational frictions might manifest from time to time. Preconceptions on either side of the divide are not only possible but should be anticipated, as leaders consider command climate and culture. The leadership must have a nuanced perspective of this reality in order to foster a team-oriented climate, embracing all constituencies without whom CANSOFCOM's success would not be possible.

More to the point, given the reality that the CANSOFCOM community will always need to spread its talent among the wider CF, it is unlikely a large SOF-experienced critical mass of experienced officers and senior enlisted leaders will populate CANSOFCOM HQ. Accordingly, it makes sense to see the value in a small headquarters. A small headquarters concentrates on the essential governance functions across the continental staff system and is forced to distribute many FD and FG responsibilities downward. This aligns those core activities with unit-level expertise, ensuring continued relevance. It also remains true to two of General Natynczyk's core change precepts: command centricity (clearly separating command and staff functionality) and mission command (properly distributing execution of responsibilities downward to achieve mission success). Adopting such a philosophy also hedges against placing too much technical responsibility on a headquarters with few seasoned SOF members in it which places these individuals in a difficult position. Seeing the value in a small headquarters is something CANSOFCOM should wear as a badge of honour. Having made the case endorsing a small headquarters, is there a way to better focus a small slice of it directly toward enhancing operational output?

USSOCOM's recent creation of a Center for Special Operations (CSO) may be instructive. Freed from administrative functions, this key C2 node's sole responsibility is planning, synchronizing, supporting and executing SOF missions. It does this by combining the traditional intelligence, operations and planning functions with a joint, interagency coordination group.¹⁰⁸ In effect, CSO "supports

the supported command” that USSOCOM has become in relation to global pursuit operations. While the author does not advocate for the direct C2 role CSO plays, the notion of isolating core intelligence, operations and planning staffs alongside interagency experts is worth considering. This construct could require organic leadership at the colonel or brigadier-general level to provide this node timely direction and support across the combined joint interagency task force (CJIATF) network and would effectively form the nucleus of an eventually deployable special operations C2 element (SOCCE) HQ. This node would free the remainder of CANSOFCOM headquarters to focus on the political-military interface and military-strategic policy issues. A natural downside would be the creation of another level of C2 structure. Paradoxically however, it would likely enable the benefits derived from CANSOFCOM’s flat structure by providing smoother information flows and promoting distributed allocation of decision rights within an enhanced incentive structure.¹⁰⁹

Intra-command uniqueness between different organizational units must be celebrated as a factor that contributes to the command’s collective strength. In examining the American experience, we noted that a key group of elected leaders were mobilized to the cause of standing up USSOCOM. This was a result of their ability to be persuaded that USSOCOM had a competitive advantage to offer the broader military mission set. Indeed, they believed in this sufficiently to arm USSOCOM’s mandate with upstream powers to force develop, set training standards and acquire equipment while limiting downstream effects to synergized SOF outputs under UCCs. In the Canadian context, it is clear that senior military and political leaders see CANSOFCOM’s competitive advantage. They structured and grew it appropriately in Hillier’s transformation and indications suggest it will fare well in the 2011 transformation effort. Ergo, the risk is largely an upside and internal one. Upside risk is due to the questions of the command’s survival being set aside; therefore, the risks centre on the future. The issue is how to mature the command most effectively. CANSOFCOM’s own headquarters, as it increasingly becomes more savvy and capable, must not adopt an egalitarian perspective. CANSOFCOM HQ must fundamentally resist the temptation to make difficult problems easier by harmonizing requirements, processes, methodologies or viewpoints among units. Doing so would gradually diminish CANSOFCOM’s competitive advantage, which arises from uniquely selected and trained people under units who fulfil distinct roles. These high-grade people confer upon CANSOFCOM the ability to be agile, creative and adaptable, which are all forms of competitive advantage in their own right.

This point relates to the regulatory, normative and cultural-cognitive domains of Scott’s model. Standard operating procedures (SOPs) on their face make sense of operational planning processes, but their rigidity militates against creativity. Their mechanistic nature may lead one to conclude they are useful in time-compressed planning environments, but this often comes at the cost of shared understanding of second- and third-order consequences of decisions on a checklist. The author argues egalitarianism is a normative crutch designed to minimize tensions between units. The most helpful ingredients to preserving competitive advantage are clear roles, missions and tasks; a regulative piece that sets the table for all ensuing decisions relative to FD, FG and FE. This clarity removes the need for “normative levelling” and contributes to a healthy internal culture where people operate within known and defined boundaries. But it is important to underscore that CANSOFCOM will generally never fight alone.

History tells us that SOF operations require conventional support. The complexity of the COE and FSE suggests this trend will persist, and this is especially so in CANSOFCOM’s situation. It is a modestly sized SOF community residing within a modernized CF but one that will never have the reach to cover the full spectrum of conflict, as the US currently does. Whether this is a good or bad

thing is irrelevant; it is a thing that informs the friendly situation of every estimate CANSOFCOM undertakes. To contend with normative tensions, it is thus imperative that the command retain a high degree of humility and connectedness in relation to its joint and combined partners. CANSOFCOM's leaders would do well to seed a very balanced perspective between its rightfully earned confidence as a proven strategic resource and a healthy amount of humility that many of those successes would have been impossible to attain were it not for the support of the environments and partner nations. Remaining humble acts as a force multiplier to CANSOFCOM's institutional credibility because it empowers others to see themselves as crucial stakeholders in CANSOFCOM's success. Humility generates a heightened willingness on the part of others to lend support. It also grounds CANSOFCOM personnel to the extent where they do not buy into the myth that SOF are the answer to every intractable problem set. Humility breeds sound professional judgement and a level of quiet confidence which forms the bedrock of how SOF should be seen—as quiet professionals. This goes to connectedness in the sense that CANSOFCOM must share its people as widely as it can because these highly talented, culturally balanced warriors are the best vehicles to securing support. Exposure beyond CANSOF not only benefits the CF and the member but also benefits the command by accruing goodwill and support.

It is in CANSOFCOM's interests to see its senior enlisted leaders and officers gravitate upward in the CF hierarchy. Doing so requires succession planning governance frameworks that nest within the wider CF mechanisms. This is progress. Individually, CANSOF personnel need to retain the chimera-like quality about them in order to be effective leaders within the CANSOFCOM community while remaining recognizable, and known, to the wider CF community. They must be adept at integrating within either constituency and agile enough to not lose their acquired "specialness" in terms of skills, tradecraft and culture in so doing. Being able to achieve this requires that selected individuals be exposed back into conventional forces at key junctures, but it also demands that they embrace the challenge and remain abreast of goings on outside CANSOFCOM. This also speaks to the need to pay close attention to cultural indoctrination, or enculturation, of its membership. While time consuming and resource intensive, this formative training is a crucial early step when new members arrive and must be reinforced through punctual professional development at all levels.

In this subsection, we have considered a number of observations germane to CANSOFCOM's internal environment. Creating a culture and climate conducive to cognitive conflict is essential to rigorous debate and long-run health. Celebrating the uniqueness of individual units at the expense of harmonized staff solutions is necessary but exceedingly counter-intuitive to many because it agitates against an egalitarian culture dominant in the Canadian psyche. In this sense, the author has argued for seeing the benefit of a small headquarters albeit one which might be reorganized to further enhance operational output. The primacy of the normative and cultural-cognitive pillars was highlighted as a function of long-run institutional health, and a case was made to embrace a deliberate balance between humility and confidence, while ensuring the command does not fall prey to becoming institutional apologists in order to garner support. It has too much to be proud of to adopt such a stance. Having looked at the external and internal imperatives, the next subsection will address several observations that are common to both and that are seminal to achieving the one thing CANSOFCOM needs most moving ahead: enhanced institutional legitimacy.

Institutional legitimacy

CANSOFCOM requires a deliberate strategy appropriate to both its external and internal realities. Possessing a succinct yet clearly articulated roadmap of how to connect the future vision of CANSOFCOM with a series of specific achievable and time-bound objectives is as important to

the community it seeks to promote as it is for external stakeholders. Strategy is necessary in order to posture the command within a constantly changing external milieu and an internal one buffeted by growth on various levels. This strategy need not be overly complex, but it does require all actors to view it through a common lens.¹¹⁰ Externally, it should focus on reinforcing its network connectivity and cementing relationships. Designed to thicken the brand, it would articulate its space within the CF, DND, GC as well as allied defence and security frameworks and serve as a useful reference point moving ahead. Internally, it should define the path CANSOFCOM must chart to develop an ecosystem with sufficient carrying capacity for its attendant subsystems. Growth is not always good. Under certain conditions, it can prove a setback. This would include projecting some of the tradeoffs required to ensure growth in the right areas, consolidating in yet others and identifying legacy capabilities that will require shedding on the altar of relevance as threats evolve. This strategy would recognize the policy dimension as that which drives SOF operations and be rooted in a quest for enhanced legitimacy. Indeed, the very act of articulating this strategy would enhance legitimacy, for it demonstrates the maturity and vision institutions need to develop over time. Preserving and enhancing legitimacy must be at the core of what CANSOFCOM does.

CANSOFCOM's leaders must be imbued with a sense of pragmatism. To embrace the notion of "nudge progress" is to see the strategic level in realistic terms where success is measured by incremental wins which are sometimes not even CANSOFCOM's. Enabling a supporting actor accrues credit that can be expended at a later date. In the Canadian context, an Army, Air Force or Navy strategic resource or capability gain often indirectly benefits CANSOFCOM. An overly competitive approach is destined to fail, especially given the fact that the Commander CANSOFCOM, despite being a Level 1 CF commander, is a brigadier-general. This leader wears several hats in their portfolio: that of a commander, a strategic resource manager and an institutional leader, each one requiring subtly different approaches. Accordingly, Commander CANSOFCOM is uniquely responsible to set winning relational conditions with other CF/DND Level 1 leaders and must constantly negotiate which files merit their finite capacity to advance. In addition to influencing the main operating space, they must engage in the marginal operating space where much of CANSOFCOM's growth and development, particularly with other government department (OGD) and allied partners, occurs. Above all else, Commander CANSOFCOM must be a pragmatist who eschews maximalist end states if that means alienating key constituencies in the process. A long-term interests-based approach built upon the foundation of credibility and trust is of more use than a short-term one that might achieve one decisive victory at the cost of enduring cooperation.

Commander CANSOFCOM faces significant challenges in balancing the internal and external pressures of a small formation in high demand and which has near constant attention paid to it by senior military and political leaders. One key to bridging these challenges is by creating shared context. They must induce others to believe, and rightly so, that they have a level of ownership in CANSOFCOM's priorities and objectives. The commander must make the proverbial tent large enough that many constituencies have space to fit beneath it. Doing so requires a ready grasp of the essence of any given situation and strong interpersonal skills that foment goodwill and cooperation. The commander must have the sort of uncommon stamina that every environment commander possesses to weather the crushing pace imposed on institutional leaders. Being able to access personal reserves of mental agility, resourcefulness and imagination are entry-grade criteria if the commander of this crucial CF capability is to be successful. In the final analysis, a thoughtful blend of determination, balance and pragmatism superimposed on character-based leadership with strong interpersonal skills are the ingredients needed to ply the art of generalship. Nothing less should be acceptable to the CDS and the MND.

We have established that the external environment is generally favourable to CANSOFCOM's development. DND and the CF have set conditions conducive to the command's stand-up and successful employment. The outcome of the 2011 CF transformation effort will confirm if this trend persists in the face of tough choices that are to be made. Thus, the regulative piece with all its attendant external forces is relatively strong. The Commander has a generally well-aligned portfolio of responsibilities, authorities and accountabilities. The job at hand is in consolidating its position externally while paying particular attention to its internal environment as a function of long-run health and optimization. CANSOFCOM's leaders must be particularly attuned to the normative and cultural-cognitive pillars moving ahead. This is because the command is now writing its formative history, and it is this DNA that will be replicated in the years to come. And it is doing so during a time of excessive operational demands which makes the task harder in some respects but easier in others. Establishing the correct normative knowledge and expertise, superimposed upon robust cultural values and norms is what will provide CANSOFCOM its impregnable foundation in the later years. Possessing a healthy cultural-cognitive shared understanding reinforces the command's internal posture. This feeds back into the normative domain, reinforcing the link between the regulative and cultural pillars. If all three pillars are vibrant and generally aligned, CANSOFCOM will be in balance and well postured to continue its ascent as an institution. This will allow it to expand its organic power and legitimacy which, in turn, will grant it greater access to other centres of power, both institutionally and within government and allied circles.

A summary of the dozen most salient observations is offered:

- Thicken the brand while consolidating the base.
- Articulate a succinct strategy, with internal and external waypoints seen through one lens.
- Embrace a strategic communication culture.
- Be, and be seen to be, a high-reliability, value-added national-security partner.
- Promote a culture of cognitive conflict. It's a force multiplier.
- Decide what type of organization CANSOFCOM wants to be. Celebrate uniqueness.
- See the value in a small headquarters.
- Prefer the things that garner competitive advantage. People first.
- One size doesn't fit all. It kills competitive advantage.
- Remain an open system, to the maximum extent possible.
- Stay recognizable; eschew overspecialization.
- Stay humble and connected. It generates stakeholder support and power.

6. Conclusion

Sociology concerns itself with the study of collectives. It is a science to the extent it formulates hypothesis and postulates models that seek to draw deductions which are as objective as possible. But this is inherently challenging in the realm of multiple actors who create shared realities which are often divergent from that which is visibly obvious. It is precisely for this reason that institutional analysis is a useful framework through which to examine institutions. Disaggregating institutions into their regulative, normative and cultural-cognitive pillars goes some way to understanding the institutional subtext behind beliefs and decisions that are made. The interdependencies between these three pillars are unmistakable. They all affect each other, and this is particularly true in the military where a large, complex bureaucracy collides with conservative values etched in firmly held beliefs and axioms rooted in history and bloodshed on the battlefield.

Military leaders, by virtue of the heady responsibilities entrusted to them to protect the nation, must understand institutional forces. Possessing an appreciation for organizational nuance is crucial to making wise choices in what is invariably a resource constrained environment. Examining the stand-up of USSOCOM from the GNA perspective that reformed the DOD in the 1980s offers some interesting insights for the nascent CANSOFCOM. USSOCOM would not have come to life were it not for the determination of a select group of military and civilian leaders. The catalyst was a small group of professionals who adamantly believed that unified SOF was the only sustainable strategy. Their normative and cultural ideologies were translated through savvy strategic manoeuvring to influential political figures. In turn, they breathed life into the debate by having civilians decide how defence should reform because the defence establishment could not do it for themselves. This is a total paradox. The nation's top military leaders were acutely aware of a litany of abject military failures, yet they were prepared to endure future risk of failure to preserve the status quo. Only a normative and cultural-cognitive analysis explains why this was so. Service-specific interests trumped substantive joint progress because the latter had no champion with the institutional mandate or power to effect true change. Accordingly, change had to be legislated upon the military and even then, resistance persisted to the point of obstructionist disloyalty. Some important lessons for CANSOFCOM emerge as a result.

The Canadian political-military system is sufficiently distinct from the United States' own that any direct correlations are not helpful. In Canada, the MND holds the power to create or disband formations and units without the sort of checks and balances we find in the US. Naturally, the MND consults with their Cabinet colleagues on far-reaching military decisions, but it is interesting to observe that CANSOFCOM's very first unit, JTF 2, was created in 1993 through the will of government and not as a militarily-inspired enterprise. It is logical to conclude, however, that JTF 2's performance between 1993 and 2006 was sufficiently impressive that it stimulated the desire for more SOF capability both within the GC and the CF.

Those who led the strategic communication campaign to lobby leaders toward creating a unified USSOCOM teach us the importance of cultivating strategic relationships in a deep and methodical way. These SOF pioneers displayed foresight, commitment and audacity in the face of career-ending risks. They spoke truth to power, and when power would not listen, they spoke truth to higher centres of power. This type of tactic does not lend itself to the Canadian context, but suffice it to say, we can draw upon their individual characteristics and ability to organize in order to concentrate minds on the problem at hand. Once created, USSOCOM tasted some early success. They were, and were seen to be, critical ingredients to successful operational outcomes. This goes back to strategic

communication and the requirement to thoughtfully engage in order to accrue institutional goodwill and legitimacy from hard-won operations. Saying nothing in the name of operations security incurs opportunity cost in the form of unexploited legitimacy in times of crisis. It is too late to tell good news when negative attention turns on the institution. CANSOFCOM must be a proactive partner in the national-security community, and this extends to being open to the debate regarding enhanced oversight and governance. All of this is in an effort to thicken its legitimacy. But the largest challenge areas appear to be internal in nature.

CANSOFCOM is growing out of phase with some elements far more mature than others. Moreover, it borrows from numerous organizational schools in a somewhat non-traditional military sense. Its leaders must be attentive to these differences, while ensuring that CANSOFCOM remains recognizable to the wider institution. The command must also be cognizant of how it displaces other entities within the CF and GC as it matures over time. Moreover, however difficult it might be, CANSOFCOM must eschew normative levelling in a “one size fits all” staff reflex, driven by regulatory requirements. To do so would erode its competitive advantage in short order.

A number of institutional tensions exist for SOF, particularly in the normative and cultural-cognitive domains. That some in the wider military persist in seeing SOF as less-than-noble is a fact that will never disappear. But it can be mitigated by first understanding the nature of such tensions and then through a holistic series of passive and active measures. Ultimately, getting the good word out and maximizing the exposure of CANSOFCOM’s world-class warriors to the wider field force is the second best hedge against misperceptions. The best hedge, however, is to never provide grist for such misperceptions to be turned into practical examples of SOF operating outside the boundaries of a dominant military culture. On this point generally, SOF leaders must balance their confidence with humility in a way that respects the normative- and cultural-tension potential without becoming apologists in the process.

Commanders within CANSOFCOM must be of the highest order: expert in the macro understanding of its unique tradecraft, imbued with stamina and intellect, and able to positively influence a multitude of stakeholders. Above all, they must be pragmatic, able to see beyond the parapet of purely institutional interests to embrace success on a higher plane. CANSOFCOM can ill afford to run afoul of the dominant environments; ergo, a delicate balance is in order to ensure long-run progress.

In CANSOFCOM’s context, the regulative pillar is not as crucial moving forward as the normative and cultural-cognitive pillars are. The need to create a shared context and clearly defined unified narrative are of the essence. In order to establish the conditions for long-term success, CANSOFCOM’s foundation must be bombproof. This work begins at home, and it is for this reason that the author suggests internal demands are of a higher order than external ones. The institutional analysis of USSOCOM, and by extension CANSOFCOM, offers some guideposts of where to be watchful. It is by no means a panacea prescription for success, but if it forces its community of interest to pause and take stock, then it is well worth the effort in the first instance.

Abbreviations

9/11	11 September 2001
C2	command and control
CANCOM	Canada Command
CANSOF	Canadian special operations forces
CANSOFCOM	Canadian Special Operations Forces Command
CBRN	chemical, biological, radiological and nuclear
CDS	Chief of the Defence Staff
CEFCOM	Canadian Expeditionary Forces Command
CF	Canadian Forces
CINC	commander-in-chief
CJCS	Chairman of the Joint Chiefs of Staff
CJIRU	Combined Joint Incident Response Unit
COE	contemporary operating environment
CSO	Center for Special Operations
CSOR	Canadian Special Operations Regiment
CT	counterterrorism
DND	Department of National Defence
DOD	Department of Defense
FD	force development
FE	force employment
FG	force generation
FSE	future security environment
GC	Government of Canada
GNA	Goldwater–Nichol’s Act
HASC	House Armed Services Committee
HQ	headquarters
HRO	high-reliability organization
IA	Institutional Analysis
IQ	intellectual quotient
IWQ	irregular warfare quotient
JROC	Joint Requirements Oversight Committee
JTF 2	Joint Task Force Two

MFP	major force programme
MND	Minister of National Defence
PQ	physical quotient
RCMP	Royal Canadian Mounted Police
SEAL	Sea, Air, Land
SECDEF	Secretary of Defense
SF	special forces
SOAS	special operations aviation squadron
SOCOM	Special Operations Command
SOF	special operations forces
SOP	standard operating procedure
SOPAG	Special Operations Policy Advisory Group
SOSU	Special Operations Support Unit
SOTC	Special Operations Training Centre
SOTF	special operations task force
Sqn	squadron
UCC	unified combatant commander
UK	United Kingdom
US	United States
USSOCOM	United States Special Operations Command

Notes

1. Dr. Eric Ouellet, “Principle-Based Decision-Making: Institutional Analysis” (presentation to JCSP 37, DS 542 Elective, Canadian Forces College, Toronto, ON, 2010), 4–7.

2. W. Richard Scott, *Organizations: Rational, Natural and Open Systems*, 5th ed. (New Jersey: Prentice Hall, 2003), 3.

3. The instruments of national power are commonly defined by the following pillars: diplomatic, informational, military and economic (DIME). A government exerts its domestic and/or foreign policy objectives largely through these four categories of national capability and the more they are in phase, the more powerful the effect a government may bring to bear.

4. Scott, *Organizations*, 8.

5. The terms SOF and special forces (SF) are often used interchangeably. From a purist perspective, SF is the broad umbrella comprising forces at the beginning of the “special continuum,” where conventional ends and SF begins. US Army Rangers, UK Special Forces Support Group (SFSG) and CSOR are examples of such forces having dual roles: to support more precise SOF elements and to conduct their own missions. Continuing in the SF band, US Army Green Berets and US Navy SEALs are forces designed to complete autonomous missions within the context of broader campaigns. SF are sometimes referred to as “White SOF,” denoting a degree of openness and accessibility. SOF further along the right side of the spectrum are sometimes referred to as “Black SOF,” denoting an elevated

degree of operational security critical to the mission itself. Alternatively called “National Mission Forces” (NMFs) or “Special Mission Units” (SMUs), examples include Canada’s JTF 2, the US Army’s Combat Applications Group (CAG), the US Navy’s Special Warfare Development Group (DevGroup), the UK’s 22 Special Air Service Squadron (22 SAS), Australia’s Special Air Service Regiment (SASR) and Israel’s Sayeret Matkal, to name several. These forces are at the right end of the “special continuum” to which national missions (those deemed as politically high risk and directly central to national interests) are conferred and whose capabilities are exceedingly precise.

6. The combination of 9/11’s attacks and a maturing globalization have dispersed and networked terrorist threats in such a manner as to require an adaptive “global man-hunting” approach. This is predicated on close interagency cooperation and centres on the combination of intelligence and operations in what is often described as “intelligence-led operations.” More specifically, it calls upon the find, fix, finish exploit and analyse (F3EA) continuum to neutralize threats. Jihadist militants competently leverage advances in communications and travel within networked structures to elude the reach of Western power. Robert Martinage, (testimony before US House of Representatives; HASC Subcommittee on Terrorism, Unconventional Threats and Capabilities, Washington, DC, March 3, 2009).

7. Admiral Eric T. Olson, “Commander United States Special Operations Command 2010 Posture Statement,” 1.

8. Robert G. Spulak, “A Theory of Special Operations,” special issue, *Military Technology* (2009): 23. Spulak makes this contention, noting that at one time fighting at night was the domain of special forces but today’s proliferation of night vision devices (NVDs) increasingly allows conventional forces to do so. The author would point to the CF experience in Afghanistan where today’s infantryman is equipped with laser aiming devices and optical sighting systems and uses certain close quarter battle (CQB) techniques once the domain of SOF. It must be noted that CANSOF has facilitated the cascading of these very technologies, tactics, techniques and procedures to field forces through the provision of training assistance teams (TATs), personnel secondments and more open lines of communication.

9. *Ibid.*, 24.

10. This common military axiom paraphrases 19th-century military theorist and Prussian Field Marshall Helmut von Moltke.

11. Spulak, “A Theory of Special Operations,” 25.

12. Major-General Mike Hindmarsh, Commander Special Operations Command Australia, “The Philosophy of Special Operations” (speech to the United Service Institute of the ACT, Australian Defence College, August 9, 2006). When Hindmarsh’s economy-of-force comment is expanded, it suggests that government can commit small SOF forces to send strategic messages in lieu of large conventional commitments. In fairness to Hindmarsh’s overall perspective, the author disagrees with the main contention of his cited discourse where he states that what makes SOF distinct is far less about individual comparable soldier qualities *than the way in which they are deployed*. His premise offers that roles, missions and tasks are the determinant factor in understanding what separates SOF from conventional forces. The author disputes this on the grounds that organizationally, you cannot adopt a SOF FE construct without the foundational strength provided by an elevated degree of aggregate individual quality.

13. Spulak, “A Theory of Special Operations,” 26.

14. The citation read that JTF 2 was bestowed this distinguished award for extraordinary heroism in action against an armed enemy during the period 17 October 2001 to 30 March 2002, accessed May 26, 2011, <http://www.cdnmilitary.ca/index.php?p=62>, (site discontinued).

15. February 2006 was early days in the massive CF transformation effort. So early in fact that first reports of CANSOFCOM’s stand-up called it the “Special Operations Group” or SOG. This early acronym was changed, however, when the first commander, Colonel Dave Barr, petitioned the CDS to go with CANSOFCOM, thus posturing it more deliberately alongside other commands. Accessed April 14, 2011, <http://www.forces.gc.ca/site/commun/ml-fe/article-eng.asp?id=2698>, (site discontinued).

16. “CANSOFCOM,” accessed April 14, 2011, <http://www.cansofcom.forces.gc.ca/gi-ig/backgrou-ctxte-eng.asp>, (site discontinued).

17. “CANSOFCOM,” accessed April 17, 2011, <http://www.cansofcom.forces.gc.ca/gi-ig/cct-tbc-eng.asp>, (site discontinued). JTF 2 is responsible for a broad range of missions which include CT operations and armed assistance to other government departments. JTF 2’s mission is defined as providing to Canada a force capable of rendering armed assistance in the resolution of an issue or potential issue that affects national security. While JTF 2’s primary role is CT, its personnel can be employed in any type of military operations, which include, but are not limited to, surveillance, security advice and close personal protection. Accessed April 17, 2011, <http://www.jtf2-foi2.forces.gc.ca/index-eng.asp>, (site discontinued). CSOR defines itself as a robust and adaptable weapon in CANSOFCOM’s operational arsenal, combining firepower and mobility with a host of other skills required to conduct and enable operations at home and abroad. It is also the “public face” of the command as an innovative and cutting-edge SOF element. Accessed April 17, 2011, <http://www.csor-ros.c.forces.gc.ca/index-eng.asp>, (site discontinued). CJIRU—a chemical, biological, radiological and nuclear response (CBRN) capability—has as its mission “to provide specialized, timely and agile CBRN response to the GoC [Government of Canada].” Accessed April 18, 2011, <http://www.cjiru-uuic.forces.gc.ca/index-eng.asp>, (site discontinued). 427 SOAS is an Air Force unit embedded within CANSOFCOM under an operational-command relationship allowing the Commander of CANSOFCOM to dictate operational missions while core technical authorities remain aligned under the Air Force. 427 SOAS “provides dedicated Special Operations Aviation (SOA) effects as part of high-readiness special operations task forces (SOTFs) for domestic and international operations.” Accessed April 18, 2011, <http://www.airforce.forces.gc.ca/427-soas-427eosa/index-eng.asp>, (site discontinued). At the time of writing, a Special Operations Training Centre (SOTC) and Special Operations Support Unit (SOSU) are being actively studied for a potential stand up in 2012.

18. Canada Command (CANCOM) and Canadian Expeditionary Forces Command (CEFCOM) are the CF’s two force employers. The normative construct is that the three environments force develop capabilities (conceive, design and build in concert with Chief of Force Development [CFD]) and force generate capabilities (raise, train and sustain) to a point to handoff to CANCOM and CEFCOM who direct the employment (deploy, employ and redeploy) of those forces within their stated areas of responsibility. In the case of CANSOFCOM, it both develops and generates forces for CANCOM and CEFCOM. Canadian Operational Support Command (CANOSCOM) is the fourth operational command.

19. Accessed April 17, 2011, <http://www.cansofcom.forces.gc.ca/index-eng.asp>, (site discontinued).

20. Ibid.

21. Ibid.

22. Accessed April 19, 2011, <http://www.socom.mil/SOCOMHome/Pages/GSC.aspx>, (site discontinued).

23. General Brown, USSOCOM Commander (testimony before the HASC, 2006), accessed April 19, 2011, http://commandocs.house.gov/committees/security/has0677260.000/has067260_0.HTM, (site discontinued).

24. Ouellet, “Principle-Based Decision-Making,” 8.

25. W. Richard Scott, *Institutions and Organizations: Ideas and Interests*, 3rd ed. (Stanford University: Sage, 2008), 68.

26. Mary Jo Hatch, *Organizational Theory: Modern, Symbolic and Postmodern Perspectives*, 2nd ed. (London: Oxford University Press, 2006), 19.

27. Scott, *Organizations*, 27.

28. Ibid., 29. Selznick’s groundbreaking analysis, “The Tennessee Valley Study,” in 1949 showed his propensity to prefer the normative aspects of organizations focusing on informal structures and stressing the importance of power processes in how organizations functioned.

29. Ibid.

30. David Denyer, David Tranfield, and Joan Ernst van Aken, “Developing Design Propositions Through Research Synthesis,” *Organizational Studies* 29 (Winter 2008), 400.

31. Ibid., 404.

32. Ibid.

33. Paul R. Schulman, “Heroes, Organizations and High Reliability,” *Journal of Contingencies and Crisis Management* 4, no 2 (June 1996): 75. Schulman describes HROs that engage in honouring heroes who have achieved great exploits and how the organizations use this recognition of a person for clarifying organizational values and culture as well as transmitting these from one generation to the next. Alternatively, some HROs eschew individual recognition, preferring to create a culture totally built around group success as a function of managing systems that prefer prior knowledge and behavioural conformity.

34. Denyer, Tranfield, and van Aken, “Developing Design Propositions,” 401.

35. Schulman, “Heroes, Organizations and High Reliability,” 80.

36. Scott, *Institutions and Organization*, 48.

37. Ibid.

38. Ibid., 77.

39. Scott, *Organization*, 107.

40. Scott, *Institutions and Organizations*, 77. The term *structuration* was coined by scholar Anthony Giddens. He saw structuration as “a duality of social structure” within an institution which is defined as social structures involving strongly held rules supported by more robust relations and more entrenched resources than those in non-institutions. Giddens’ perspective supports Scott’s ideology because it is decidedly organicist while respecting individual actors as knowledgeable, insightful and capable of reflexive action where they see, monitor, continuously assess outcomes and adapt accordingly.

41. Ibid., 79. These four carriers map differently across Scott’s three pillars. Symbolic systems can be rules, laws, values, expectations, classifications or frames of reference. Relational systems can be governance/power systems, authority systems or identities. Routines revolve around SOPs, protocols, jobs, obedience to duty and scripts. Finally, artefacts might be objects, conventions, standards or objects possessing symbolic value. An excellent example of an artefact would be found within JTF 2’s mess. A rather large and gaudy photo of Elvis Presely (on an ornate wooden background) hangs high in the mess (higher than the Queen’s photo, actually) and is flanked by two bejewelled AK-47 assault rifles captured in battle from Al-Qaeda operatives. This arrangement says a great deal about how the unit membership see themselves: strong and victorious in battle, slightly irreverent (nothing in a mess is supposed to hang higher than the Queen, but of course Elvis is the King!) and honouring a star who was at the top of his game and ahead of his time, common traits that members feel apply to the unit.

42. Ibid., 95. This displacement theory will account for some of the CANSOFCOM–environment tensions we discuss in section 5. Robert Pitts and David Lei’s work, *Strategic Management: Building and Sustaining Competitive Advantage* (Ohio: South Western College Publishing, 2000), 122, notes four stages in a firm’s life cycle: introductory, growth, maturity and decline. This is an important piece as we will see in section 5, as CANSOFCOM finds itself growing asymmetrically with units and an HQ at different stages.

43. Ibid., 96.

44. Ibid., 100.

45. As we will see in section 4, individuals like Senators Sam Nunn and Barry Goldwater were instrumental in USSOCOM’s creation. In the case of CANSOFCOM, this would include then CDS General Rick Hiller who spearheaded the CF Transformation initiative and ultimately approved

the creation of CANSOFCOM as a standalone operational command. Moreover, in the context of consolidating CANSOFCOM's standing within the CF after an understandably precarious start, then Colonel (now Major-General) D. Michael Day must be seen as one such actor, constantly struggling to carve CANSOF's institutional niche in an environment that was not overly charitable (in some instances) to this initiative. One could also add JTF 2's plank holders (initial operators from the unit's stand-up in 1992) to this category. In many ways, these men (a healthy number of whom remain on active service and now occupy senior positions within the organization) blazed the SOF trail for all who would follow.

46. One useful of example is when JTF 2 began operating in Afghanistan in 2001 as part of Task Force K-Bar. It regrouped disparate functions such as intelligence, signals intercept, geomatics, linguists and analysis under one unified intelligence node called the special operations intelligence centre or SOIC. This concept would be built upon as conventional forces developed the all source intelligence centres, or ASICs, that proved highly useful supporting Joint Task Force Afghanistan's conventional forces for many years in that theatre.

47. Ibid., 124. This is a particularly salient concept for our analysis of CANSOFCOM's internal environment at section 5. Taken to a higher level when looking at government agencies that produce a public good, Terry Moe offers a fascinating perspective on bureaucracies and why they are mired in complexity with seemingly little room to exercise rational choice. He posits that in democracies, civilian authorities can use their coercive powers to design arrangements that serve their ends, but because the possibility always exists for competing political parties to do the same if they inherit power, political leaders restrict the discretionary powers of agencies, confining them in a web of rules. I would extend this line of reasoning to suggest constant political uncertainty in a healthy democracy is one reason why the bureaucracy itself, in some cases, resists politically driven change agendas, something that should be anathema to the professional military leader lest we fall victim to accusations of the civil-military "problematique."

48. Ibid., 52.

49. In Chapter 5 of *Institutions and Organizations*, Scott examines strategic choice models and calls upon the work of Axelrod who invited game theorists to assist in examining the best model, primarily for security regimes in real-world settings. Of all game theories, the one found to possess the best outcomes was the "Tit for Tat" theory where leaders would operate on a continuum of behaviour being (a) nice, (b) retaliatory, (c) forgiving and (d) clear. He states: "Its niceness (never initiating noncooperation) prevents it from getting into unnecessary trouble. Its retaliation discourages the other side from persisting whenever defection is tried. Its forgiveness helps restore mutual cooperation. And its clarity makes it intelligible to the other player, thereby eliciting long-term cooperation." (Scott, *Institutions and Organizations*, 117). There is also the question of overarching strategies to deal with external institutional pressures. He calls on the work of [Christine] Oliver who identifies five strategies: (1) acquiescence (conforming), (2) compromise (balancing and placating), (3) avoidance (concealment and buffering), (4) defiance (publicly resisting) and (5) manipulate (co-opting, influencing or controlling), from Scott, *Institutions and Organizations*, 171.

50. Scott, *Institutions and Organizations*, 56.

51. Ibid., 57.

52. Ibid., 59.

53. Ibid., 220.

54. Ibid., 59.

55. Ibid., 61.

56. The term *significant* does not imply that major sweeping structural change occurs every time following a transformation initiative. My choice of language is meant to underscore that such initiatives are internalized by the military as "significant emotional events," despite the fact that changes themselves are often subtle. Transformations may also feature changes in resource allocations, processes and governance, to name a few.

57. Paul M. Besson, *The Goldwater–Nichols Act: A Ten Year Report Card* (Cambridge: Harvard University Press, 1998), 5.
58. *Ibid.*, 15. Besson rightly points out that the US never lost a major battle, but tactical success in counterinsurgency warfare bears no correlation to strategic victory.
59. Wayne K. Maynard, “The New American Way of War,” *Military Review* 73 (November 1993): 6.
60. *Ibid.*
61. James R. Locher, III, “Defence Reorganization: A View From the Senate” (guest presentation, Seminar on Command, Control, Communications and Intelligence, Spring 1987, Cambridge, Mass, Harvard University Program on Information Resources Policy I-88, May 1, 1988), 149.
62. Besson, *The Goldwater–Nichols Act*, 11.
63. *Ibid.*, 6.
64. US Colonel Rusty Napier (Retired), “The History of USSOCOM” (presentation, Special Operations Forces: A National Capability Symposium, Royal Military College of Canada, Kingston, ON, December 7, 2010).
65. Former Chief of Naval Operations, Admiral James L. Holloway chaired the commission, but its recommendations provided no compelling structural reforms to SOF C2 or budgetary matters. More to the point, the structure provided no high-ranking military champion able to compete at the Service level. *History of United States Special Operations Command*, 6th ed. (MacDill Air Force Base, FL: USSOCOM, 31 March 2008), accessed November 17, 2014, <http://www.socom.mil/Documents/history6thedition.pdf>.
66. Napier, “The History of USSOCOM.”
67. All six SOPAG members were retired general or flag officers. Chairman Lieutenant General Sam Wilson was accompanied by Admiral James Holloway, Lieutenant General Leroy Manner, Lieutenant General Jim Ahmann, Major General Richard Secoy and Brigadier General Don Blackburn.
68. Napier, “The History of USSOCOM.”
69. *History of United States Special Operations Command*.
70. Besson, *The Goldwater–Nichols Act*, 24. The CJCS assumed greater control over resources through a mandated annual Chairman’s Programme Assessment incorporating UCC requirements into the Joint Requirements Oversight Committee (JROC). JROC is chaired by the Vice CJCS with vices or deputies from the four Services representing. Prior to GNA, resourcing was almost uniquely within the Service’s domain. JROC has three main mandates. It sets priorities for military systems and requirements to meet the National Military Strategy. It oversees important national acquisition programmes (cost, schedule, performance and alternatives), and finally, it prioritizes military programmes to conform with strategic defence planning and resource allocations. Richard M. Meinhart, “Vice Chairman of the Joint Chiefs of Staff and Leadership of the Joint Requirements Oversight Council,” *Joint Forces Quarterly* 56 (1st Quarter, 2010).
71. The American military system is very different than Canada’s (or the UK’s for that matter). Canada’s Parliamentary democracy, especially in majority government times, is vastly simpler for a CDS to navigate than the United States’ Representational System with two houses (the Senate and Congress) generally checking the executive powers of the President and his staff. Samuel P. Huntington cited a vignette that speaks to this when US General David Jones, CJCS was conferring with his UK counterpart Admiral Sir Terence Lewin about changes they both felt were needed to strengthen central military authority. “Admiral Lawrence went back, wrote up his plan in a memorandum and sent it to the Prime Minister. He got it back two weeks later with ‘Approved, Margaret Thatcher’ written on it. I went back, wrote an article and published it three years ago, and today it is still being debated.” Samuel P. Huntington, “Centralization of Authority in Defence Organizations” (guest presentation, Seminar on Command, Control, Communications and Intelligence, Spring 1985, Cambridge, Mass, Harvard University Program on Information Resources Policy I-88, February, 1986), 1–3.

72. Sean Naylor, “Spec Ops Standoff,” *Army Times*, August 31, 2009, 1.

73. *Ibid.*, 2.

74. Gary Johns, in his article “The Essential Impact of Context on Organizational Behaviour,” *Academy of Management Review* 31, no. 2 (2006), makes a compelling case that the impact of context on organizational behaviour is under-represented in understanding why certain decisions are taken. Olson’s 2010 request falls squarely within the regulative pillar—personnel management protocols and his desire to better control them. To place SOCOM’s evolution in context, its annual budget had grown from US\$2.3 billion in Fiscal Year 01 to US\$10.5 billion in Fiscal Year 12. The Air Force’s budget in Fiscal Year 12 is US\$24.8 billion, and a slice of these monies contributes to USSOCOM by way of major weapons programmes, personnel costs, base costs, etc. We, thus, note the largesse of USSOCOM’s annual budget in comparison to that of the Air Force when compared to overall force structure size and scale of major weapons programmes. D. Mark Peterson, Chief Financial Officer USSOCOM, “United States Special Operations Command: Resourcing Special Operations in the New Normal” (presentation), accessed May 22, 2011, http://www.asmcnline.org/wp-current/upload/chapters/europeanpdi2011/D2_General_Session_2_Mark_Peterson_USSOCOM_European_PDI_Brief_2.pdf (site discontinued). The point here is that USSOCOM’s profile and attendant resources had been increasing at a rate far greater than the Services. That context, when taken with Scott’s contention that emergent institutions displace extant ones as they grow, may help explain why it was that the Service chiefs marshalled their collective gravitas against Olson’s initiative.

75. The “chain of command” prior to GNA (in accordance with the National Security Act of 1958) was from the President to the SECDEF to the Commanders-in-Chief (currently the UCCs). By Pentagon directive, this line of communication ran “through the Joint Chiefs of Staff,” meaning that neither the CJCS nor the JCS could issue orders other than in the name of SECDEF, which effectively meant that the Services actually held control. This is because Service chiefs, in their role on the JCS, were supposed to don a “joint or unified hat” for strategic oversight, but parochial bias invariably meant that a true joint perspective was never in play. Besson, *The Goldwater–Nichols Act*, 13.

76. *Ibid.*, 6. Besson offers a summary of the key criticisms: an imbalance between Service and joint interests, inadequate joint military advice, inadequate quality of joint military personnel, imbalance between the responsibilities and command authorities of the CINCs, confused and cumbersome operational chains of command as well as ineffective strategic planning.

77. *Ibid.*, 23–24.

78. Karen DeYoung, *Soldier: The Life of Colin Powell* (New York: Random House, 2006), 237. The Powell doctrine posited that if civilian leaders committed to armed action as an extension of diplomacy, overwhelming force should be applied to ensure a rapid and decisive victory and an equally speedy withdrawal of forces. In this context, General Powell was animated by large manoeuvre formations and not drawn to SOF’s small-unit, irregular-warfare, tactical bent. This may help explain the natural aversion he held toward SOF in general. Powell’s Vietnam experience as part of the 23rd Infantry “Americal” Division no doubt contributed to his jaded perspective because SOF operated independently of conventional forces in this era. Everyone is a product of their formative experiences to some extent.

79. Besson, *The Goldwater–Nichols Act*, 11.

80. Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (Garden City, NY: Anchor, 1967).

81. Scott, *Institutions and Organizations*, 95.

82. Admiral Mike Mullen’s speech for the West Point Graduating Class of 2011 in Michael G. Mullen, “From the Chairman,” *Joint Force’s Quarterly* 62, (3rd Quarter, 2011): 4. Vice Admiral Ann E. Rondeau, President of the National Defence University in Washington, DC, echoed this theme in relation to the Vietnam fallout in a speech she offered entitled “Identity in The Profession of Arms” where she stated, “having lost sight of our own beliefs, and maybe adopting some new ones, we were not

in a sound position to positively affect the American people's beliefs about and attitudes toward *their* military. It took us a long while to work our way out of that—and to win back the respect and support of the people we serve.” [emphasis in original] Ann E. Rondeau, “Identity in the Profession of Arms,” *Joint Force's Quarterly* 62, (3rd Quarter, 2011): 11.

83. Besson, *The Goldwater–Nichols Act*, 10.

84. Scott, *Institutions and Organizations*, 138.

85. Gulf War 1, Operation DESERT STORM, is generally understood as the first true information war on two accounts. Firstly, it was reported live by embedded journalists in the context of 24-hour news coverage with military commanders providing daily media briefings to update coalition progress. Secondly, its prosecution was marked by levels of digitization unseen until this point. Air tasking orders detailing up to 3,000 sorties daily were distributed on local area networks, and in the words of noted C2 scholar, Colonel Allard, “Desert Storm may be better remembered as the first war to demonstrate the means, the methods, and the awesome lethality of combat in the information age. ... [O]ne of the lasting legacies of Desert Storm will be a continuing by the U.S. defense establishment to exploit the potential of advanced technology and precision weaponry in an emerging paradigm of information warfare.” C. Kenneth Allard, “The Future of Command and Control: Toward a Paradigm of Information Warfare,” in *Turning Point: The Gulf War and U.S. Military Strategy*, ed. L. Benjamin Ederington and Michael J. Mazarr (Boulder, CO: Westview Press, 1994), 161.

86. Napier, “The History of USSOCOM.”

87. Ibid.

88. Scott, *Institutions and Organizations*, 57.

89. Ibid.

90. Henry Mintzberg, *Mintzberg on Management: Inside Our Strange World of Organizations* (New York: Macmillan Press, 1989), 16.

91. Another authoritative group of organizational scholars defined militaries as “quintessential bureaucracies” because they were unequivocally coercive and mechanistic in process, featuring stark divisions of labour and power with direction flowing unambiguously from the top downward. Joseph Soeters, Paul C. van Fenema, and Robert Beers, eds., *Managing Military Organizations: Theory and Practice* (Routledge, New York: 2010).

92. Mintzberg, *Mintzberg on Management*, 221. Mintzberg espouses four systems that can form the basis of an organization's influence systems: authority (sanctioned power), ideology (widely accepted beliefs), expertise (power that is officially certified) and politics. The latter is informal and is neither widely accepted nor officially certified. Politics play out through “intricate and subtle, simultaneous and overlapping” games. While a full description is beyond the scope of this analysis, several political games appear to have played out on both sides of the USSOCOM/GNA debate. For the USSOCOM camp (in varying degrees), the *insurgency game* (designed to resist authority in order to enact organizational change and is usually initiated at lower levels), *sponsorship game* (played to build a power base using superiors professing loyalty in return), *expertise game* (unsanctioned use of expertise to build a power base by exploiting technical skills and knowledge, uniqueness and criticality or “irreplaceability”) and the *strategic candidates game* (played to effect change within an organization where preferred strategic change is promoted through political camps). For the Service chief / anti-USSOCOM camp: *alliance-building game* (played among peers for each to build power for self-interests), *empire-building game* (non-cooperative laterally, usually played with individual subordinate entities), *budgeting game* (played overtly similar to empire-building game with resources as the prize) and the *lording game* (lording “legitimate” power over those with less of it or without power altogether). Mintzberg, *Mintzberg on Management*, 239.

93. Scott, *Institutions and Organizations*, 124.

94. Commander S. A. Tatham. *Strategic Communications: A Primer* (London, UK: Defence Academy of the United Kingdom, Advanced Research and Assessment Group, December, 2008), 3.

95. Dr. Lee Rowland and Commander Steve Tatham, Royal Navy, “Strategic Communication and Influence Operations: Do We Really Get It?” (London, UK: Defence Academy of the United Kingdom, 2008), 6.

96. United States Air Force Office of Public Affairs, *Charting Our Future* (Washington, DC: 2005), 209.

97. *Ibid.*, 4.

98. CANSOFCOM is a unique organization in that it force develops, force generates and, when directed, may force employ unique military capabilities in a joint context. The CF will need to engage in the debate as to where CANSOF stands in relation to the Army, Navy and Air Force as a function of overarching CF policy matters (personnel, equipment, readiness and infrastructure) that will increasingly require fidelity as CANSOFCOM matures. The author is not suggesting CANSOFCOM becomes “the fourth environment,” but it will trend more and more in that direction; ergo, institutional leaders would do well to have a fulsome discussion regarding the CF’s vision on it, and other emerging joint capabilities, moving ahead.

99. It is worth noting the four pillars of JTF 2’s ethos: relentless pursuit of excellence, shared responsibility, humility and humour in the face of adversity. These all play directly to the author’s point of promoting a notion of legitimacy and nobility by simply opening up where practicable so others can see firsthand the talent, commitment, effectiveness and humility that pervades CANSOFCOM.

100. The traditional acid test for SOF employment is four fold. First: Is the mission appropriate? Generally, is it a SOF task or can it be accomplished by other means? Second: Is the mission feasible? Do the parameters allow for a likelihood of success? Third: Is it justifiable? Are the risks justified by the potential costs? (On this point, the author would note that a modest loss of lives represents a sizeable proportion of the annual operator intake so metrics of possible casualties as a function of mission planning are SOF-specific). Lastly, is the mission sustainable? Can the small force be adequately resupplied owing to the fact that they generally fight as a light package. The vital ground the author refers to is around command. SOF forces must never be tactically led by officers who possess no SOF-specific expertise. That is not to say the SOF element cannot nest under a conventional C2 structure, but tactical leadership must stem from SOF officers who appreciate the intricacies of the business.

101. Robert Gates, “Reflections on Leadership,” *Parameters* (Summer 2008): 11.

102. Mintzberg, *Mintzberg on Management*, xx.

103. *Ibid.*, 157.

104. *Ibid.*, 198.

105. *Ibid.*, 223.

106. *Ibid.*, 136.

107. The x-axis’ quality can be subdivided in terms of IQ (relative IQs, mental agility and performance under stress and tolerance for decision making under duress), PQ (motivation and determination, ability to persevere under physical hardship, general fitness and stamina) and IWQ (adaptability; flexibility; lateral thought processes; and ability to take in large, non-linear inputs and arrive at cogent tactical solutions). The concept for this comparative assessment of SOF versus general military populations is borrowed from the work of Spulak, “A Theory of Special Operations.” The IQ, PQ and IWQ are drawn from a visit the author conducted to the John Fitzgerald Kennedy Special Warfare Center (JFKSWC) in Summer 2006.

108. Bryan “Doug” Brown, “U.S. Special Operations Command: Meeting the Challenges of the 21st Century,” *Joint Forces Quarterly* 40 (1st Quarter 2006): 39.

109. In 2008, the author hosted Commander USSOCOM and this idea was broached in conversation. Admiral Olsen cautioned that creating any additional layers of headquarters was something to be

very wary of. The model proposed above is not done in this spirit. It should not be seen as a miniaturized Canadian Joint Special Operations Command (JSOC) but simply as an internal CANSOFCOM node where staff action elements are deliberately reorganized as a function of the primacy of operations.

110. Stephen Metz, *Iraq and the Evolution of American Strategy* (Washington, DC: Potomac Books, 2008), xxi. Metz argues that a strategy itself is limited if those who it relates to view it through differing paradigms. A common frame of reference focuses the coherence and predictability that the strategy seeks to impose in the first instance.