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MASTER OF DEFENCE STUDIES RESEARCH PAPER

FADED LANES AND TANGLED CHAINS -

Command and Control Challenges for the Canadian Operational Support Command

By /par Lieutenant-Colonel Jon Burbee

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## ABSTRACT

The last of four new operational level commands created as part of the Canadian Forces' (CF) Transformation in 2005 was the Canadian Operational Support Command (CANOSCOM), with the mission to provide joint operational level support forces to CF international and domestic operations. Although apparently a unique construct, joint operational support has been a persistent ambition of western militaries as well as a pivotal element of force restructuring efforts. Despite the requirement for CANOSCOM as part of CF Transformation, the organization appears problematic to some critics largely because of the necessarily complex relationships with specialist functional authorities (lanes) and command accountability (chains of command).

It is proposed that the long term effectiveness of CANOSCOM is imperiled by still unresolved command and control issues. By examining organizational structure as a mechanism of control in industry, the government sector, and selected armed forces, it is apparent that existing organizational frameworks are either exceedingly complex or insufficiently adapted to meet the current and future challenges. This limitation of control is acceptable however as it has been shown that over-control will often limit the effectiveness of the command function. The rubric used to measure the command effectiveness within CANOSCOM shows that growing imbalance between competency, authority, and responsibility in the command will adversely affect the organization in the future. Ultimately, the ability to achieve common intent within an effective command environment is essential to an enduring solution for CANOSCOM and the CF.

## INTRODUCTION

Military operations can only proceed for one tactical bound, one sortie, or to the entrance of the harbour without considering operational support.<sup>1</sup> Historical examples of defeats abound from the earliest era through to current conflicts due to an inability of forces to sustain themselves. Despite criticisms that governments, their military advisors, and senior commanders occasionally fail to apply due influence to improve operational support, the truth is that the complexity of various situations and the numerous strategies available to the decision-makers result in a multitude of potential solutions to this challenge. This problem is exacerbated with the growth of the number of joint and integrated operations and the logistically astonishing support expectations for current force projection scenarios. Because of the need for global reach and intensive support requirements of the current force, it is submitted that the need for operational support that works in a joint and interagency environment has never been more important, nor a greater challenge, to armed forces than it is today.

Consequently, because operational support is accepted as being vital to military success, and because it has historically been part of the solution to previous reorganization efforts, it would logically follow that this would also be part of the organizational changes brought forth through the transformation of the Canadian Forces (CF). One outcome of CF Transformation was the creation of the Canadian Operational Support Command (CANOSCOM) in 2006. It will be shown that CANOSCOM in its current construct within the CF has an uncertain future because of fundamental command

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<sup>1</sup> Throughout this paper, the term “operational support” will be used as defined later in the text. Occasionally, the literature that predates the term will also use “sustainment”, “support”, or at times “logistics”. The reader should be aware that where these terms are used in cited text, the intention is that these words represent the capabilities of operational support as a whole.

and control challenges. This weakness in command and control is neither acceptable to the warfighter, to the service members called to serve in this new command, nor to the citizens of Canada.

To prove the assertion that CANOSCOM's sustained success depends upon effective command and control, this paper will build on three themes relevant to the thesis: the requirement, control, and command. The requirement for a joint, national, and operational level support organization such as CANOSCOM is far from an artificial construct; it is a natural solution derived from a study of previous military experience and an essential element of current CF Transformation. However, it will be proposed that the longevity of this critical organization is questionable given the challenging control measures in place. For example, the convoluted organizational structure within the CF and the Department of National Defence (DND) and escalating complex processes will quickly render the organization an obstacle to be circumvented by nimble staff officers rather than it being an operational enabler. The function of command within CANOSCOM will be unable to overcome deficiencies in control because of an imbalance between competency, authority, and responsibility as identified in a command effectiveness model. Ultimately, what challenges the command and control of CANOSCOM is the difficulty in achieving a sense of shared intent that is subsequently conveyed into coordinated action.

Command and control as a single concept is but one capability of any military formation, although it is suggested that this is the capability of foremost importance. This notion could explain why command and control was the subject of the first external

review following CF Transformation.<sup>2</sup> Equipment, skilled personnel, vehicles, weapons, and other resources are all crucial, but these capabilities are all for naught if not coordinated and motivated by effective command and control. Command and control, in comparison to the aforementioned companion capabilities, is also comparably easier to establish and amend as required. In the case of CANOSCOM, this most important element of command and control currently in place appears to be flawed and is therefore worthy of more comprehensive analysis.

Despite initial success, serious questions have arisen within DND and the CF as to the benefit and relevance of CANOSCOM to the CF. Although certain liberties and allowances are made for new organizations, the grace period is quickly expiring. Of particular concern, questionable command and control constructs of joint operational support within the CF will jeopardize the longevity of CANOSCOM. If the command and control of CANOSCOM is portrayed as being so problematic, then undecided observers may simply question the value of the organization at all. This problem holds a degree of urgency in that the current changes towards a pan-CF command and control construct will likely endure for an indefinite period.

As this organization appears somewhat novel in the history of the Canadian military, it is perhaps of value that the construct of operational support be precisely defined. The initial planning guidance provides the following definition of operational support:

**Operational Support:** The delivery of specialized support functions that are not ECS-unique [Environmental Command Staff – Army, Navy, Air Force] but routinely have direct impact on CF operations planning, deployment,

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<sup>2</sup> Report on the Validation of the Transformed CF Command Structure (C2 Validation Report). This review has yet to be published, but the existence of the study is common knowledge within NDHQ.



execution, redeployment and reconstitution either in Canada or abroad. This is the "general" support provided from the national level to the theatre level in accordance with the supported [Commander's] concept of operations. Operational support includes the aspects of military engineering, health services, military police, logistics (including movement), equipment maintenance (primarily land equipment), personnel support, resources management, CIS [computer and information systems] support and C2 [command and control] for the support organization.<sup>3</sup>

This definition is very important, not only because it provides a necessary reference in terms of a common understanding, but also because of the specific selection of words in the definition and in the title of the organization. To begin, including “Canada” in CANOSCOM’s label implies a focus on a national capability. As anyone with NATO experience knows, operational support within a coalition is normally a national responsibility. In fact, the ability of a nation to logistically support and administer its national troops constitutes one of the elements that allow a nation to achieve strategic objectives.<sup>4</sup> Secondly, CANOSCOM is operational, not only with the implicit appreciation that this organization will operate between the strategic and tactical levels of conflict, but also that the main effort is focused on operations. Thirdly, CANOSCOM focuses on support, which implies the host of functional abilities as listed in the Chief of the Defence Staff’s (CDS) guidance. And finally, the last syllable indicates that CANOSCOM is a command: not an agency, not a formation, and not a centre. It is a command, with all the military expectations of all other commands in the CF.

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<sup>3</sup> General R.J. Hillier, *Chief of Defence Staff Initial Planning Guidance - Canadian Operational Support Command* (National Defence Headquarters, Ottawa: file 3000-1 (CDS), 26 Jan 06).

<sup>4</sup> Major-General Daniel Gosselin, “Canada’s Participation in the Wars of the Early 20th Century: Planting the Seeds of Military Autonomy and National Command.” *Canadian Military Journal*, Vol 7, No2 (Summer 2006): 69. During the South African War from 1899-1902, it was the British acceptance of Canadian national support independent of the British War Office that led to the creation of what would now be known as a national command element, setting the scene for more autonomous national command during WW1.

To critics who would label CANOSCOM as a construct that is simply more original than practical, it is offered that the organization is not unique to the contemporary period, nor to the Canadian experience. There are in fact, numerous similar historical precedents of how support was provided to combat forces as well as accounts of how the issue of operational support was consistently central in the debate of achieving effective command and control in the armed forces.

The early 19<sup>th</sup> century marked a period of time where the nature of warfare was revolutionized by the actions of innovative strategists such as Napoleon and Moltke and through writings by theorists such as Clausewitz and Jomini. During this era, operational support theory and doctrine was primitive at best. Armies of this period then began to reconsider how best to organize their operational support needs, with a variety of solutions. The Austrians established a supply corps in 1783 with the task of sourcing provisions in situ rather than from forts or magazines on the route of march.<sup>5</sup> Carl von Clausewitz was once so frustrated by the lack of coordinated sustainment during battles that he sparked his own transformation in Prussia with carefully constructed organizations specifically established to manage the provisioning of the field forces.<sup>6</sup>

The U.S. Armed Forces had their own varied experiences with the organization of operational support. Starting with the 1903 Root Plan in the period immediately following the Spanish-American War through to the first Gulf War, the Executive Branch, legislators, and senior military officials sought a solution that balanced all the considerations of an operationally relevant supporting force with appropriate oversight.

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<sup>5</sup> Martin van Creveld, *Supplying War - Logistics from Wallenstein to Patton* (Cambridge, UK: Cambridge University Press, 1977), 34.

<sup>6</sup> *Ibid.*..., 79.

Although the solutions varied according to the unique circumstance particular to the era or nation, each came to a general conclusion; namely the requirement for a command enabled and centrally controlled organization responsible for joint operational support.

An initial and unapologetic caveat is that CF Transformation in general, and CANOSCOM specifically, is a work in progress and is therefore subject to the academic equivalent of Heisenberg's Uncertainty Principle: an object unable to be simultaneously accurately observed and measured. Therefore, for this paper, primary reference will be made to the public documents available during the initial stages of development. The impact of this situation is that while some of the observations that follow in this paper may lose currency, the premises of effective command and control remains the same. In fact, observations made herein could be used to validate developments subsequent to the publication of this paper.

## **LITERATURE REVIEW**

Scholarly studies on joint operational support are sparse. Martin van Creveld notes this in his introduction to *Supplying War*: “Hundreds of books on strategy and tactics have been written for every one on logistics....”<sup>7</sup> Overlooking operational support, it seems, is an omission shared by writers and militaries alike. Often the only circumstances that earn any ink at all are those where logistic failures led to defeat in battle. In addition to van Creveld's work, Dworak's treatise on logistic post-operation reports cites struggles to organize correctly operational support from Guadalcanal through to Operation Iraqi Freedom. Looking at the organization of the defence bureaucracy and fielded forces, operational support is a central issue in John Ries' work

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<sup>7</sup> Martin van Creveld, *Supplying War - Logistics from Wallenstein to Patton...*, 231.

entitled *The Management of Defense*<sup>8</sup> and Paul Hammond's companion work *Organizing for Defense*.<sup>9</sup> One of the most seminal tomes on the subject is *Logistics in the National Defense*<sup>10</sup>, written by American naval strategist, admiral and author Henry E. Eccles.

In the realm of command and control extensive insight was drawn from Carol McCann and Ross Pigeau, Department of National Defence (DND) scientists known for their work on human factors in command and control and their *Balanced Command Envelope* model. Other helpful sources were a medley of essays in *In Athena's Camp - Preparing for Conflict in the Information Age*<sup>11</sup> edited by John Arquilla and David Ronfeldt and the chapter on Controlling War in Maxwell's *The Framework of Operational Warfare*. Although some translation was necessary to suit a military context, concepts derived from studies of business and government organizations were also frequently used. Although the topic of joint operational support in and of itself remains a field fertile for subsequent study, an integration of these related elements served as a most worthy foundation for this paper.

It behooves the CF to have in place an organization that can effectively deliver joint operational support. As it stands, the organization tasked to do so is faced with challenging command and control conditions which will likely hamper such ambitions.

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<sup>8</sup> John C. Ries, *The Management of Defense - Organization and Control of the U.S. Armed Services* (Baltimore, MD: The Johns Hopkins Press, 1964).

<sup>9</sup> Paul Y. Hammond, *Organizing for Defence - The American Military Establishment in the Twentieth Century* (Princeton: Princeton University Press, 1961).

<sup>10</sup> Henry E. Eccles, *Logistics in the National Defense* (Harrisburg, PA: The Telegraph Press, 1959).

<sup>11</sup> *In Athena's Camp - Preparing for Conflict in the Information Age*, ed John Arquilla and David Ronfeldt, (Santa Monica, CA: RAND, 1997).

## **CHAPTER 1 - CANOSCOM - A PREREQUISITE TO TRANSFORMATION**

Within an organization the size of the CF and the Department of National Defence (DND), there exists natural friction common to any bureaucracy. Even though each entity serves the Canadian public very well, the achievement of national security objectives has behind the scenes, competing interests among parties for influence. One of the classic tensions within an organization is the strain between functional authorities exercising control within its domain of expertise, or ‘in one’s lane’, over technical specialties in the field and the daily reporting channels based on the organization chart. In the military, the line that links authority and accountability from the Commander-in-Chief through to the newest recruit is known as the ‘chain of command’. In an organization such as CANOSCOM consisting of specialized skillsets that are also found elsewhere in the CF, this new command is in no way immune from such classic organizational tension between lanes and chains.

The creation of CANOSCOM has for some within DND and the CF, been an unwelcome change. This school of thought postures that the CF has managed to operate domestically and abroad using existing organizations and practices without the benefit of a joint operational support command. At one time not long ago, the Deputy Chief of the Defence Staff (DCDS) coordinated operational support from the Environmental Command Staffs (ECS), with the remainder coming from specialized units directed by their functional parent Assistant Deputy Minister (ADM) Groups. To this faction, CANOSCOM is a solution without a problem, and if there is a command and control challenge, the simplest resolution would be to dissolve the organization. However, the requirement for a joint operational support command is not only a historically persistent

conclusion for commanders from Napoleon to Schwazkopf; it has also been the subject of struggle between the centres of power within the respective military or defence department. Further, it is submitted that CANOSCOM is a prerequisite to the vision of CF Transformation articulated by the CDS.

Until recently, Canadian joint support doctrine was structured very differently than at present. In accordance with the 1996 version of the CF Operations Manual BGG-005-004/AF-000, a Canadian Support Group (CSG) would be established with forward and rear detachments to coordinate with the three environmental CSG detachments as required.<sup>12</sup> This concept was rarely tested outside of exercise conditions, and when it was, its success was not universal. Each mission necessitated considerable staff effort to amass the necessary operational support capabilities from throughout the CF. Planning meetings had a reputation for being tedious because of the need for functional representatives from each specialty to attend, many of whom were not empowered to make decisions and had to confer with their own chains of command following the meetings.<sup>13</sup> Deployments would require the generation of a National Support Element, typically based upon a Land Forces Service Battalion, with considerable personnel augmentation cobbled together from disparate bases and commands.<sup>14</sup> Once in theatre, CF operational support detachments would often be in location that had separate reporting channels based on functional affiliation be it communications, military engineering, or theatre movements. There was clearly a lack of centralized authority

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<sup>12</sup> Colonel J.C.S.M. Jones, "NATO's Combined Joint Task Forces and the Canadian Forces Logistics Support at the Operational Level" (Toronto: Canadian Forces College Advanced Military Study Course Paper, 1998), 18.

<sup>13</sup> Lieutenant-Colonel Tim Marsella, telephone conversation with author, 12 January 2007.

<sup>14</sup> Chief of the Defence Staff. *Enabling Transformation – CDS Action Team 2 Report*. (Ottawa, 2005), 2-B-2.

which at times resulted in a lack of unity of effort for operational support and frustration for the operators who had to navigate the intricate web of accountabilities to find the right office with whom to deal.

Occasionally, lack of effective authority for operational support had catastrophic results. The Board of Inquiry for Croatia in 2000 made the following observation:

There appears to be a requirement to establish a single operations centre to address all sustainment issues. The Deputy Chief of the Defence Staff (through the Joint staff) functions as the individual responsible for operations. A similar "Chief Supporter" does not exist. Rather, several staffs have responsibilities for operational support issues, and the potential exists for urgent operational support issues to fall through the cracks.<sup>15</sup>

As a result of these concerns articulated in this Board of Inquiry as well as other reports, and based on the demonstrated importance of operational support to military success, the CF/DND was compelled to make drastic changes. The first incremental improvement was to pursue an ambitious omnibus National Military Support Concept (NMSC) project with the following justification in the project proposal:

Specifically, the CF cannot generate the necessary strategic and operational level support forces within current Defence Planning Guidance (DPG) readiness levels for either the Main Contingency Force (MCF) or its vanguard component. Currently, support is provided to operations by creating ad hoc support elements with personnel drawn from the various Force Generators. There is no single, existing CF organisation capable of providing, or arranging, strategic and operational level support to deployed contingents, although some CF units potentially suited to fulfill parts of this role are, in fact, distributed across the force structure.<sup>16</sup>

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<sup>15</sup> Canada. Department of National Defence. "Final Report: Board of Inquiry – Croatia" (Ottawa: National Defence, 2000), 49.

<sup>16</sup> Canada. Department of National Defence. Synopsis Sheet (Preliminary Project Approval) Omnibus Project 00000283 Nov 2001 - National Military Support Capability (NMSC).

The immediate tangible result was the creation of the Joint Support Group (JSG). This action only went so far, however, as suggested by at least one critic.<sup>17</sup> Kerr states the JSG worked well for providing theatre activation, initial sustainment, and deactivation, but generally lacked the staff capacity or representation at the senior levels at NDHQ to advocate any enduring change particularly beyond the time of the dissolution of the Deputy Chief of Defence Staff (DCDS) organization as the JSG's higher headquarters. While joint operational support was deemed important it did not have the necessary profile or position on the CF agenda to overcome organizational inertia and effect significant improvement. This situation was about to change.

### **OPERATIONAL SUPPORT – PART OF THE SOLUTION**

General Rick Hillier's appointment as the CDS in February of 2005 marked a new era for the CF. Recognizing that there were serious deficiencies in the structure of the CF to respond to the future security environment, he set the CF upon an ambitious transformation programme driven by his personal leadership. As has been shown with other reorganization efforts, operational support has assumed a central role. His six guiding principles for transformation are as follows: an emphasis on a [pan] CF culture; command centric; clear accountability, responsibility, and authority; operational focus; mission command; and an integrated team of Regular and Reserve Force members and civilian employees.<sup>18</sup>

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<sup>17</sup> Commander Allan J. Kerr, "The Canadian Forces Joint Support Group - Logistics Salvation or a Commitment Unfulfilled?" (Toronto: Canadian Forces College Advanced Military Studies Course Paper, 2002), 11.

<sup>18</sup> General R.J. Hillier, *CDS Organization Order – CF Transformation and Realignment of Elements of the DCDS Group*. National Defence Headquarters, Ottawa: CANFORGEN 184/05 CDS 098/05, 061344Z DEC 05.



One of the first tangible outcomes of CF Transformation was the creation of four new operational commands: Canada Command (CANADACOM) with responsibility for domestic missions, Canadian Expeditionary Forces Command (CEFCOM), responsible for international missions, Canadian Special Operations Forces Command (CANSOFCOM) to prepare for and execute unconventional missions, and last and possibly least, CANOSCOM.<sup>19</sup> The initial mandate of CANOSCOM was “to command all routine operations in support of CF operations such as interim support bases and teams in support of personnel, vehicles, and materiel rotation and movement.”<sup>20</sup> This announcement was not merely another organizational efficiency exercise or cause to cite the words of Petronius Arbiter.<sup>21</sup> This move was a turning point in the history of the CF as it prepares itself for the future security environment. The mere existence of CANOSCOM supports nearly all the CDS’ principles of CF Transformation, with the exception of his criterion for suitable authority, responsibility, and authority. This notable exception needs to be addressed later.

As with the previously shared historical examples, operational support has consistently been a central element to any previous effort to reorganize the Canadian

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<sup>19</sup> Canada is not the first nation with such an organization. Australia established the Joint Logistics Command in 2004 as an organization on par with the three environmental commands and three other specialist components (the other three being Special Operations, Joint Operations, and Joint Offshore Protection). During the first year of operations, this command successfully supported four major operations. Australia. Department of Defence Annual report 2004-05. Chapter Four - Outcome Performance. Outcome One: Command of Operations. [Http://www.defence.gov.au/budget/04-05/dar/04\\_03\\_outcome1\\_01.htm](http://www.defence.gov.au/budget/04-05/dar/04_03_outcome1_01.htm); Internet; accessed 28 November, 2006.

<sup>20</sup> General R.J. Hillier, *Chief of Defence Staff Initial Planning Guidance - Canadian Operational Support Command* (National Defence Headquarters, Ottawa: file 3000-1 (CDS), 26 Jan 06).

<sup>21</sup> A quotation commonly attributed to Petronius Arbiter in 510 BC reads: “We trained very hard... but it seemed that every time we were beginning to form up into teams, we would be reorganized. I was to learn late in life that we tend to meet any new situation by reorganizing; and a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency and demoralization.”

Forces (CF).<sup>22</sup> In accordance with recommendations in the *1964 White Paper on Defence*, the Canadian Forces Reorganization Act of 1967 was to achieve administrative efficiencies by combining redundant processes within the three environmental services.<sup>23</sup>

Kronenberg made the following observation in a study of the unification of the services:

Very often the supporting services do not clearly exist as distinct entities but are merged into and functionally controlled directly by the headquarters and the field forces. Nevertheless these supporting services can be regarded - at least in theory - as a distinct group. It is usually sections of the supporting services group that are the first subject of integration exercises; and very often success or failure in this relatively unimportant area determines whether integration will be pursued elsewhere.<sup>24</sup>

Clearly, support was one of the key areas identified for improvement and functionality.

Although the general objective of unification differed from the current CF

Transformation, operational support remains an essential element to the total solution.

More pertinent to CANOSCOM, the success of integrating the 'supporting services', or operational support, was considered somewhat of a litmus test for the remainder of integration at the time. It is submitted that the same premise presently holds true; the performance of CANOSCOM will be a barometer of the future success or failure of current CF Transformation towards a truly joint force. To extend this hypothesis, if CANOSCOM is created with a command and control architecture for the new CF, this new organization will also validate the broader command and control objectives of CF Transformation.

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<sup>22</sup> Vernon J. Kronenberg, *All Together Now: The Organization of the Department of National Defence in Canada 1964 - 1972* (Toronto: Canadian Institute of International Affairs, 1973), 20.

<sup>23</sup> Unification differs from the current CF Transformation in that the contemporary effort is directed towards operational effectiveness as an integrated joint force rather than for administrative efficiencies as with the former.

<sup>24</sup> Vernon J. Kronenberg, *All Together Now...*, 10.

It is possible that critics of CANOSCOM will take advantage of preliminary growing pains and the initial organizational flexibility to encourage CANOSCOM's failure to the benefit of those seeking an alternative solution that benefits other visions for the CF. Kronenberg noted the 1965 situation as follows:

New sources of power, both personal and inherent in various offices, were there to be captured, and many of the chiefs and their subordinates were not averse to devoting almost as much time to the endeavour as to their primary function.<sup>25</sup>

This is not to suggest that there has been a deliberate effort to undermine actively CANOSCOM. However, if CANOSCOM becomes ineffective particularly due to command and control deficiencies, there are likely many alternative proposals available that will support other agendas.

The renewed emphasis on making the CF truly a joint force will be successful if influence is yielded elsewhere from within DND and the CF. A comparative example was at the zenith of operational support reorganization in the US: the 1958 proposal for supra-service commands that eventually became the geographically determined combatant commands of today. Some historians maintain that despite the multitude of arguments for supra-service commands based on economies of scale for logistics and administration, the true ulterior motive was to use this rationale to boost the joint chief of staff's power by undermining the influence of individual services.<sup>26</sup> Critics of current transformation in the CF cast the same suspicions over the role CANOSCOM plays in taming the power of the Environmental Chiefs. Possible conspiracy theories aside, CANOSCOM as a joint organization that provides operationally critical services, serves as an essential part of the joint vision of CF Transformation. This vision cannot be

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<sup>25</sup> *Ibid.*..., 48.

<sup>26</sup> Paul Y. Hammond, *Organizing for Defence*..., 372.

achieved, however, without altering the balance of power towards a command and control regime that supports a sustainable CANOSCOM.

There are other potential power transactions resulting from CF Transformation. A position could be made that the essential role of the departmental side of the DND/CF dyad working under the direction of the Deputy Minister as the chief civil servant, is to support the CF, and therefore negates the need for CANOSCOM. Much economy was achieved with unification in 1968 at the strategic level in terms of consolidating numerous duplicate functions that were occurring in each of the three environmental headquarters. However, the military leadership continued to struggle with the effectiveness of this construct through the next three decades following unification. Support was unified at the strategic levels through the mixed military-civilian led group principals at the ADM level.<sup>27</sup> When it came time to mount operations, support forces were generated and employed in a variety of methods from autonomous functional units under ADM or DCDS command to operational level support units that served functions unique to a particular environmental service. Although the Department and those serving within the ADM Groups are vital members of the 'Defence Team', dependence on these strategic functional organizations often introduced an unacceptable level of friction for military commanders who were conducting operations.

The implied intent of CF Transformation with regards to operational support is to create better conditions for operational success by freeing the ADMs from service delivery functions and to concentrate on policy and oversight functions, allowing

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<sup>27</sup> Eccles' Part I (Chapters 1-6) is devoted towards defining where the break exists between strategic and tactical logistics. The term that perhaps best captures where the CF/DND has defined strategic logistics is called "civil logistics", defined as the mobilization of the industrial economy to support armed forces. (Eccles, 49)

CANOSCOM to be oriented towards operations. Lingering influence from the ADM organizations, however, and the hopeful possibility of restoring previous internal power balances remain two of the challenges to the long-term effectiveness of CANOSCOM if effective command and control is not established.

There are challenges but the command and control problem is manageable with the application of some creativity. Eccles suggests that the application of operational art in the realm of military logistics may appear counterintuitive. Logisticians, engineers, and other operational support specialists can be stereotyped as mechanistic, right-brained thinkers bred to organize and execute procedures and routine. Eccles best demonstrates his Socratic instructional abilities in that while he challenges founders of organizations such as CANOSCOM towards innovation less they be labeled as artless bureaucrats, he also provides his own conclusions to the criteria of effective operational support:

To establish the general organization, to prepare general plans in the twin fields of logistics and strategy; to establish general logistic policies and procedures; including policies and procedures for cross-servicing and cross-supply; to review requirements for forces, both service and combat; for critical and special materials; and for stockpiling, for advanced bases, and for transportation-land, sea, and air; to make recommendations as to priorities and allocations in these same fields, and within limits assigned by higher authority, to administer priorities and allocations; to form subordinate commands to which the operation and administration of central control or coordinating functions may be delegated; to provide a centralized source of up-to-date logistic information and a staff adequate to evaluate and use this information; and to provide an informed staff which can represent the commander on the extensive inter-service and international military-civilian committees which are so important in a major war.<sup>28</sup>

Eccles' conclusions nearly fifty years ago may just as well have been used as the prescription for the CF's operational support ailments pre-transformation in the CF.

While there are some foundations to work from, the command and control challenges will

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<sup>28</sup> Henry E. Eccles, *Logistics in the National Defense...*, 267.

likely require innovative thought on the part of group best known as champions of routine.

Others have suggested creating a fourth service or independent support command that would finally achieve centralized command and control for operational support.<sup>29</sup> The authors of CF Transformation wisely recognized that such a construct could lose a degree of appropriate subordination to a vision for an operational focus. Similar concerns were raised during the 1968 unification option analysis.<sup>30</sup> Again, CANOSCOM was created as an organization intended to support CF Transformation but not to the extent that it simultaneously defeats other objectives. It is submitted that CANOSCOM is appropriately situated as equal in authority to the other operational commands yet responsive to their operational requirements.

The organizations created out of CF Transformation continue to experience growth pains. As such, the process is deemed as functional, but not yet complete. The timing of evolving organizational development is all the more critical to CANOSCOM as once development has matured, this construct will remain with the CF and CANOSCOM for the foreseeable future. As will be demonstrated in subsequent chapters, the future sustainable effectiveness of CANOSCOM is highly dependent upon suitable command and control.

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<sup>29</sup> Eccles, *Logistics in the National Defence...*, 200-210. LTC Dennis E. Benfer, *Theater Logistics: Should There Be a Joint Support Command?* (Newport, RI: Naval War College, 20 May 1996), 12 and Mark Brady, *Beans, Bullets and Black Oil....Are We Delighting the Joint Force Commander?* (Newport, RI: Naval War College, 16 May 2003), 15.

<sup>30</sup> Vernon J. Kronenberg, *All Together Now...*, 12.

## A TIMELY ADDITION

There is no shortage of urgency for a solution to the challenges presented by CANOSCOM. One impetus driving rapid resolution is that the nature of war and how forces are employed to operate is changing at blinding speed. The CDS has outlined his vision for a CF of the future in order to meet these new defence demands, and an organization such as CANOSCOM is required to succeed in order to advance this vision. Armed forces are continually bombarded by an array of new theories of employing military force such as Fourth Generation War, Net Centric Operations, and Effects Based Operations, yet they still need bullets, beans, and bytes. Aggressive commanders also can be expected to want to apply these concepts immediately. Futurists John Arquilla and David Rondfeldt have proposed that wars of the future will best be fought by what they call ‘the small and the many’ in a approach called ‘battle swarm.’ This approach can be applied beyond the immediate battlespace into the domain of how operational support is structured:

...innovative organizational designs and a full appreciation that information flows are the ultimate logistical support required for combat operations. The military must network itself if it is to effect BattleSwarm. It must cut across service differences and distinctions, for a true swarm cannot exist where organizational loyalty to a service, branch, or combat specialty comes first.<sup>31</sup>

This requirement is precisely needed for a post-transformation CF, and is particularly applicable to CANOSCOM. It also describes the shift of an emphasis within operational support from materiel resources towards information resources, reiterating the importance of including communications and information services capabilities within CANOSCOM.

Whether it is projecting force globally or meeting domestic security needs in remote

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<sup>31</sup> John Arquilla and David Rondfeldt, "Looking Ahead: Preparing for Information-Age Conflict", in *In Athena's Camp - Preparing for Conflict in the Information Age*, ed John Arquilla and David Rondfeldt, (Santa Monica, CA: RAND, 1997), 477.

areas of Canada's Arctic, the CF requires an organizational construct that allows CANOSCOM to support the operational commander without becoming obtrusive. Operational support must not only keep pace with these changes, but these changes have to occur first in the order of march of transformation activities in order to support the new operational paradigms.

Another organization which has recognized the need for new joint operational support concepts is the North Atlantic Treaty Organization (NATO). CANOSCOM is well suited to take the lead as the CF representative. NATO is also transforming to meet future security challenges, with logistics issues as a major element of the changes. One irony in NATO is that the overwhelming mass of supporting forces and administrative support for modern forces is rendering these same forces obsolete.<sup>32</sup> A large operational support footprint can offend local sensitivities and makes these forces more vulnerable to attacks. In low intensity conflicts, fronts are frequently non-contiguous, meaning that the assumption of a lower threat in rear support areas is no longer valid.<sup>33</sup> Non-contiguous engagement areas also imply vulnerable lines of communication between territories under secure control. NATO is pressing forward with its own transformation, and operational support is a central pillar to the campaign of change. With initiatives such as the Multinational Joint Logistic Centre and Multinational Integrated Logistic Units, operational support concepts within the alliance will fundamentally change.<sup>34</sup>

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<sup>32</sup> Martin van Creveld, *On Future War* (London: Brassey's, 1991), 29.

<sup>33</sup> *Ibid.*, ..., 203.

<sup>34</sup> Major Tyler Fitzgerald and Major Salvatore Moccia, "Lessons from Pakistan - NATO Response Force Debuts, Sharpens Its Focus", *Defense News* (12 June 2005), 1-2, quoted in Canadian Forces College, "Force Development and Sustainment" (Joint Command and Staff Programme 33 Activity Package C/DS 523/SUS/SM-1), 10/10.



CANOSCOM provides an ideal point of contact to mutually represent evolving support concepts between NATO and the CF or at least give a Canadian contribution towards NATO development.<sup>35</sup>

A third impetus, and one that in Canada unfailingly initiates urgent and frenzied staff action, is public criticism and scrutiny. One such instance occurred with personnel management. The CDS was compelled to answer questions on the issue of personnel replacement when it came to light that replacement times for troops who were injured or killed took the CF twenty-one to thirty days.<sup>36</sup> This episode reinforced what one writer previously noted as a deficiency whereby human resources were treated fundamentally differently from material resources.<sup>37</sup> Even in Eccles' time, human resource support to operations remained an ongoing point of contention. He described it as principally a logistic matter, if not the most important logistic matter, but also recognized its complexity that needed careful management at the highest levels.<sup>38</sup> This challenge remains for effective personnel management, exacerbated by the tempo of operations concurrent with CF Transformation and efforts in support of growing the force. A

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<sup>35</sup> The Commander of CANOSCOM now represents the CF at the Senior NATO Logisticians' Conference, the Pacific Area Senior Officer Logistics Seminar, and the Quadrilateral Logistics Forum.

<sup>36</sup> Les Perreux, "Military fine tunes troop replacement in Afghanistan, says Cda's top soldier," Canadian Press, [News on-line] available from <http://ca.news.yahoo.com/s/02102006/2/world-military-fine-tunes-troop-replacement-afghanistan.html>; Internet; accessed 2 Oct 2006.

<sup>37</sup> Captain (N) Bryn M. Weadon, "Canada's Joint Sustainment Co-ordination Capabilities" (Toronto: Canadian Forces College Advanced Military Studies Course Paper, 2000), 17.

<sup>38</sup> Henry E. Eccles, *Logistics in the National Defense...*, 52. Note that at the time of writing, personnel tasking responsibilities were being transferred to CANOSCOM with unresolved personnel taskings being sent to the Strategic Joint Staff for resolution.

remedy is required quickly or the CF is bound to face a catastrophe with observations similar to those described in the Croatia Board of Inquiry.<sup>39</sup>

One of the Croatia Board of Inquiry observations, as well as other literature, was a criticism of ‘ad hocery’. ‘Ad hocery’ is a term that refers to the *ad hoc* but common practice of forming support units from geographically separate locations on a temporary basis during operations. Following the military support operation to the Group of Eight Conference at Kananaskis, Alberta in 2001, commanders were posed the following question for the post operation report: “Was your headquarters staffed and structured adequately?” In what is perceived as a point for improvement, the Support Component (SC) Commander answered that: “...SCHQ was put together in an ad hoc fashion. It must come together early, be adequately staffed, and train as a team”<sup>40</sup> This situation is likely to continue as an unavoidable practice in the operational support community due to the myriad of command elements that may require the services of a limited quantity of various support units. The CF will likely require a flexible system, even an *ad hoc* one, capable of sourcing and allocating support forces from modularized capability elements into rapidly formed contingency units while avoiding truly problematic outcomes such as post-deployment support.

## **A PRESCRIPTION FOR SUCCESS**

To conclude, even the most avant-garde forces of each era of military history had difficulty balancing technical expertise with operational savvy, rationalizing centralized

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<sup>39</sup> Canada. Department of National Defence. Final Report: Board of Inquiry - Croatia. (Ottawa: National Defence, 2000). Observations included, among other things, lack of personnel support, particularly with regards to augmentee support for operational stress injuries, poor medical administration, lack of water, and even the reuse of body bags.

<sup>40</sup> Operation GRIZZLY - Support to the Group of Eight Conference 2001 Post Operation Report. <http://kms.kingston.mil.ca>; DND Intranet accessed 19 Jan 2007.

versus decentralized organization of logistics support, and avoiding bifurcated command of operational support. Of the scant writings available on the organization of operational sustainment forces, several enduring conclusions are evident. The first conclusion, originating from Eccles, is that, “The command point of view is that logistics itself has no purpose other than to create and to support combat forces which are responsive to the needs of command” and the primacy of operations.<sup>41</sup> The second conclusion is that support must be as agile and adaptive as the forces they support.<sup>42</sup> The third conclusion is that even from the earliest days of warfare, difficulties on the battlefield often originate from a lack of centralized sustainment planning, oversight, and management experience. An organization such as CANOSCOM has been the persistent solution through modern history. Fourthly, it has been established that effective operational support is critical not only to the CF as a modern military organization, but that it is also critical to advance current CF Transformation. The question remains, however, as to the criticality of the command and control arrangements for CANOSCOM. It is suggested that the command and control of CANOSCOM is a determining factor to the organization’s effectiveness in that via these means that the authority and responsibility of CANOSCOM is regulated.

As one expert on organizational management writes:

The fit between the internal organization of an enterprise and its strategy is central to strategic management. Inappropriate internal organization can prevent or impede the development and implementation of a strategy, causing the enterprise to perform at less than full potential.<sup>43</sup>

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<sup>41</sup>Eccles, *Logistics in the National Defense...*, 9.

<sup>42</sup> LTC Steven W. Pate, *Transforming Logistics: Joint Theater Logistics*. (U.S. Army War College, Carlisle Barracks, Carlisle, PA, 15 Mar, 2006), 1.

<sup>43</sup> Roderick E. White, "Generic Business Strategies, Organizational Context and Performance: An Empirical Investigation," *Strategic Management Journal*, Vol 7, no. 3 (May - June, 1986); 217-231; <http://www.jstor.org>; Internet; accessed 20 November 2006.

It is submitted that this appropriate internal organization is necessary not only to CANOSCOM but also to the environment in which CANOSCOM operates: the CF as a whole. The establishment of such an organization, as necessary as it may be, is only the first step to effecting positive change for joint operational support in the CF. In the following chapters, it will be shown that the suitability of the structure within the organization and an effective command environment within the greater CF will ultimately determine the sustainability of CANOSCOM as an organization.

## CHAPTER 2 - CONTROL – STRUCTURE AND PROCESS

The preceding chapter postulated that the fit between an internal organization of an enterprise and its strategy is central to strategic management and that inappropriate internal organization can actually stymie the achievement of strategic goals. The means whereby a military organization imparts and executes its will upon an organization to achieve desired results is known as ‘Command and Control’.<sup>44</sup> Although space does not permit a broader exploration of this concept, it applies to the central question of whether or not the command and control (C2) systems that are currently in place adequately support tasks that are assigned to CANOSCOM. The initial assessment is that the C2, or the means whereby CANOSCOM interacts with other elements of the CF/DND to deliver operational support, does not solve the classic organizational strain.

### DEFINING CONTROL

The term “Command and Control”, or C2, is commonly used and misused as an all encompassing term for the discrete definitions of command and of control. It is here essential to establish a suitable framework for common understanding of command and control for future discussion later on. The CF Leadership Manual defines command as:

The authority vested in an individual of the armed forces for the direction, co-ordination and control of military forces. Also, the authority-based process of planning, organizing, leading, and controlling the efforts of subordinates and the use of other military resources to achieve military goals.<sup>45</sup>

While this definition serves as an excellent starting point, McCann and Pigeau derive another definition of command as “the creative expression of human will necessary to

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<sup>44</sup> Carol McCann and Ross Pigeau, "Taking Command of C2", *Second International Symposium Proceedings on Command and Control Research and Technology*. (Market Bosworth, UK, 1996), 3.

<sup>45</sup> Department of National Defence, A-PA-005-000/AP-004 *Leadership in the Canadian Forces - Conceptual Foundations* (Ottawa: DND Canada, 2005), 129.

accomplish a mission.”<sup>46</sup> This definition is preferred as it reflects the human element in command. ‘Control’ is defined in the NATO handbook as:

That authority which may be less than full command exercised by a commander over part of the activities of subordinate organizations, or other organizations not normally under his command.<sup>47</sup>

The observant reader will notice that each of these two definitions includes a reference to the other term, unmistakably confusing the distinction between the two terms. Again, McCann and Pigeau provide a more concise term for control: “A system to impose order, coordinate activity, and manage resources.”<sup>48</sup>

Therefore, it can be shown that ‘command’ is distinct from ‘control’. Command is typically represented as an attribute that is manifested by control, whereas control is framed as a process that is subordinate to command.<sup>49</sup> In terms of priority within the CF, ‘command’ has unequivocally been given precedence over ‘control’ through the CDS’ vision for a ‘command-centric’ organization. However, the terms are related in that each action requires the other. Pigeau and McCann define the conjoined term of C2 as “The establishment of common intent and the subsequent transformation of intent into coordinated action.”<sup>50</sup> The ability to infuse CANOSCOM with a shared intent and to

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<sup>46</sup> Carol McCann and Ross Pigeau, "Clarifying the Concepts of Control and Command." US Naval War College. *Proceedings of the 1999 Command and Control Research and Technology Symposium* (Newport, RI, 1999), 5.

<sup>47</sup> Defense Technical Information Center, "NATO Terminology: <http://www.dtic.mil/doctrine/jel/doddict/natoterm/c/00290.html>; Internet; accessed 22 January 2007

<sup>48</sup> Ross Pigeau and Carol McCann, "Putting 'Command' Back into Command and Control: The Human Perspective", *Proceedings of Command and Control Conference* (Ottawa: Canadian Defence Preparedness Association, 1995), 4.

<sup>49</sup> Ibid...., 5.

<sup>50</sup> Carol McCann and Ross Pigeau, "Taking Command of C2"...., 3.

transform this intent into coordinated action will be a fundamental criterion upon which the hypothesis of CANOSCOM's C2 effectiveness is assessed.

As control is typically a more intuitive topic than the ethereal concept of command, this aspect will be discussed first. Since organizational structure is one means of control used by militaries to establish a hierarchy to regulate decisions and actions, the discussion will be heavily weighted towards the effects of structure on control and ultimately, of effectiveness.

### **STRUCTURAL CONTROL**

The context of control measures for CANOSCOM will be limited to the external organizational environment, namely the rest of DND/CF. It has previously been established by Roderick White that the success of CANOSCOM will in part be a function of the successful orchestration of authority via the organizational structure. The most compelling evidence for the importance of an effective command and control system was put forward by Marcoulides and Heck.<sup>51</sup> Through a quantitative study of numerous and various organizations, they proved their hypothesis that performance depends upon an organization's culture, which in turn depends upon an effective organizational structure. The importance of culture even prevailed over other variables such as worker attitude or leader effectiveness. The foundation for culture, and subsequently success, is a structure that sets up an organization for success. According to this study, it can be deduced that the organizational structure in which CANOSCOM operates will be a determining factor in the command's success.

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<sup>51</sup> George A. Marcoulides and Ronald H. Heck, "Organizational Culture and Performance: Proposing and Testing a Model," *Organization Science*, 2, no. 2 (May, 1993) 209-225.

Actually deciphering the organizational structure can be a difficult task in itself, especially when dealing with National Defence Headquarters (NDHQ). Doug Bland commented on the bifurcated command relationships between the largely civilian DND bureaucracy under the Deputy Minister and the CF under the CDS immediately following unification:

Unfortunately, the organizational diagrams and the operating structure of the new headquarters introduced even more ambiguities in the command authority and relationships between the CF and DND. Now there was confusion not only at the top of the organization, but also throughout the headquarters and field structure.<sup>52</sup>

As pessimistic as Bland may have been, for there were also positive outcomes of unification, this observation arguably remained valid for the next thirty years. For some, the situation has become worse with CF Transformation.

An eventual outcome of the official unification of the Canadian Forces on 1 February 1968 was that the organizational construct used at NDHQ was that of a functional matrix.<sup>53</sup> This form of organization was very much in vogue with multinational firms at the time but is now dated.<sup>54</sup> The matrix organization has the disadvantages of being difficult to manage and slow to produce decisions. A project or issue is generated on the left side of the matrix by a process owner and subsequently coordinated, reviewed, or approved across a host of functional stakeholders until a product either expires enroute or emerges from the right side of the matrix. This construct frequently results in conflict between line authorities generally invested in the

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<sup>52</sup> Douglas L. Bland, *Chiefs of Defence: Government and the Unified Command of the Canadian Armed Forces* (Toronto: Brown Book Company Ltd, 1995), 98.

<sup>53</sup> Vernon J. Kronenberg, *All Together Now...*, 87.

<sup>54</sup> Joseph L. Bower, "Building the Velcro Organization: Creating Value Through Integration and Maintaining Organization-wide Efficiency" *Ivey Business Journal*, (November/December 2003) [http://www.iveybusinessjournal.com/view\\_article.asp?intArticle\\_ID=451](http://www.iveybusinessjournal.com/view_article.asp?intArticle_ID=451) Internet; accessed 29 September 2006.



Environmental Commanders and functional authorities within the ADM Groups. With CF Transformation, the situation has become even more complicated as the coordination matrix exploded into three dimensions with four new operational commands imposed on top of an existing structure.

Although creation of four operational commands meets the CDS' vision of a level of command between the strategic and tactical levels, it also exponentially increases the level of coordination within what is now a three dimensional matrix. Issues or products will now require consultation along the axes of the ADMs, Environmental Commands, and now Operational Commands. The situation is further exacerbated by the fact that the reorganization of the DCDS Group has not been resource neutral; many positions crucial to coordinating issues remain vacant. This is the complex organizational conundrum that must be resolved in order for CANOSCOM to be viewed as effective. Otherwise, the confusion that Bland noted from the previous reorganization attempt will remain.

In terms of organizational design, besides the matrix, there is another model to be considered; centralized or decentralized constructs. The dilemma of this structure pertains that too much centralization creates an insurmountable inertia while too little creates waste through the inefficient use of resources.<sup>55</sup> In general, however, it can be summarized that any action that increases the role of a subordinate is decentralization; any reduction of the role is centralization.<sup>56</sup> To degree to which the creation of CANOSCOM is perceived as a centralizing or decentralizing action will have profound

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<sup>55</sup> Henry E. Eccles, *Logistics in the National Defense...*, 156.

<sup>56</sup> Jay M. Shafritz, J. Steven Ott, and Yon Suk Jang, *Classics of Organization Theory* (Belmont, CA: Thomson Wadsworth, 2005), 56.

and lasting effects with regards to the acceptance, and therefore sustainability, of the organization.

It has yet to be decided whether CANOSCOM, as a concentration of specialists, is a move towards centralization or decentralization. From the strategic perspective within the ADM Groups, fragmenting previously held operational level responsibilities to CANOSCOM could be perceived as a move to decentralization. In the Environmental Commands, it is possible that there may be a perception of lost authority over operational support capabilities, and thus CANOSCOM is possibly viewed as a drive for centralization. Ideally, CANOSCOM will be perceived to be in the middle ground. It is submitted that it is irrelevant as to whether or not CANOSCOM is deemed as a centralizing or decentralizing change, as there will always be a measure of each in any organization. What is important is that scarce resources within the CF are used optimally while remaining flexible to meet support requirements.<sup>57</sup>

Therefore, as a new organization CANOSCOM must optimize the benefits of consolidating operational support responsibilities while minimizing the detrimental qualities of this structure, of which there are many. One potential hazard is a trend towards over-conformity whereby internal esprit de corps and informal social organization can lead to an inflated sense of their own importance and the defence of group objectives rather than the needs of the clients, in this case the other three operational commands.<sup>58</sup> Shafritz, et al, also coin the phrase of *Caveamus Expertum* to describe the dangers of such homogeneity. Their observations include the tendency for functional experts to:

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<sup>57</sup> Ibid..., 56.

<sup>58</sup> Ibid..., 107

“...gain a profound sense of omniscience and a great desire for complete independence in the service of society. Constraints are simply a limitation of freedom and any criticism is derived from ignorance and jealousy.”<sup>59</sup>

Therefore, it is evident that there is a relationship between organizational structure and culture. In order to avoid a negative *Caveamus Expertum* culture, it is vital that a balance be struck. For this organizational construct to be sustainable, formal and informal leaders within CANOSCOM will need to recognize the natural benefits and perils of a concentration of specialists within the command.

Achieving this balance is clearly a challenge for CANOSCOM. Although accountable principally to the CDS and his Strategic Joint Staff (SJS), one could argue that CANOSCOM is also simultaneously accountable to the departmental functional authorities, namely, the Assistant Deputy Ministers who are responsible for strategic policy, procurement, and external liaison for the Department. Whenever an organization is responsible to two authorities, and each office issues direction in what it believes to be its own authority, it creates the situation of dual command.<sup>60</sup> This situation is exacerbated when organizations flow between various commands, as is the case with operational support forces assigned to operational commands. For instance, operational support forces may be responsive to report readiness levels to their environmental command as well as to the gaining operational command prior to an operation. The words of Eccles further complicate the issue of unity of command by his dictum that:

The logistic support system must be in harmony with the structure and employment of the combat forces it supports. This has the important implication that since our combat forces are designed to accomplish different but complementary tasks, our logistic system must be designed for different but

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<sup>59</sup> *Ibid.*..., 85.

<sup>60</sup> *Ibid.*..., 51.

complementary tasks. Furthermore, each segment of our combat forces makes specialized and differing demands upon the logistic system.<sup>61</sup>

This prerequisite for harmonization is obeyed in US joint doctrine, largely based on the experience of large scale military operations, which calls for the Combatant Commander to assert direct authority over in-theatre logistics “to ensure the effective execution of approved operation plans, the effectiveness and economy of the operation, and the prevention or elimination of unnecessary facility duplication and overlapping functions.”<sup>62</sup> This authority over logistics evidently is accompanied by the obligation to apply competence, sound judgment, and restraint in the exercise of such control.<sup>63</sup>

Perhaps in the case of CANOSCOM, it is better to emphasize unity of effort rather than of command. In the complicated organizational construct currently in use in the CF and DND, it is likely impossible to isolate completely authorities and accountabilities for an organization such as CANOSCOM.<sup>64</sup> According to Shafritz et al, unity of effort calls for one responsibility, one plan for a group of activities towards one objective: a unity of direction driven by sound organization and leadership from within and without division.<sup>65</sup> This noble aim is remarkably similar to the current CDS’ vision for an aligned effort within the CF. However, in practice, this aim may oversimplify the challenges to CANOSCOM. In the complex security environment in which the CF

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<sup>61</sup> Henry E. Eccles, *Logistics in the National Defense ...*, 225.

<sup>62</sup> United States: *Joint Chiefs of Staff Doctrine for Logistics Support of Joint Operations* JP 4-0, 1995, I-6.

<sup>63</sup> Henry E. Eccles, *Logistics in the National Defense ...*, 210.

<sup>64</sup> Major-General D. Benjamin, Commander CANOSCOM, telephone conversation with author, 2 February 2007. Such a condition is typically referred to as “stovepipes” or “silos”, with the negative stigma whereby functionally related organizations are linked from the tactical to strategic levels without significant interaction with other specialties.

<sup>65</sup> Jay M. Shafritz, J. Steven Ott, and Yon Suk Jang, *Classics of Organization Theory...*, 51.

operates, it is submitted that in times of high tempo operations it is impractical to have the CDS or his SJS arbitrate each and every conflicting operational support requirement. Unity of effort works well until an organization, or a part of an organization, attempts to fulfill what it perceives to be its assigned responsibilities but exceeds the legitimate authority to do so. One solution proposed by Shafritz is to establish rules for a 'gang plank' liaison and coordination across the scalar chains of command.<sup>66</sup> In this way conditions may be established for lateral accountabilities without the need to seek higher authority and thus avoid the condition of dual command. Regardless of the solution, the organizational construct in which CANOSCOM operates makes it susceptible to being placed in a dual command situation. CF commanders and staff must be aware of this fact and take the necessary mitigative measures to foster a unity of effort.

The final assessment rests with the results. Thus far, given the success in conducting operations globally, including the current operational support challenges being overcome in Afghanistan, the organizational controls are fragile but effective. It must be kept in mind, however, that there are concepts and precedents that support alternate arrangements. Further, if Eccles is correct, the organizational controls currently in place may simply be a function of personalities, in this case, highly effective and cooperative personalities that compensate for any weaknesses in structure. This situation is precisely why the ineffective command and control regime currently in place jeopardizes the long term effectiveness, if not existence, of CANOSCOM beyond the current and transitory favourable conditions.

There are several variables that can be used to determine the structure of an organization such as the sophistication of the administrative authority hierarchy, the

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<sup>66</sup> *Ibid.*..., 57

complexity of resources and communications flow patterns, and the relative focus of the organization output.<sup>67</sup> By now, it should be evident that all three of these variables will be heavily weighted in a bureaucracy such as DND/CF and to CANOSCOM in particular. Van Creveld surmises that there is no single perfect command system devised yet because each is situationally dependent: "It is possible for the [control] system appropriate to the logistic aspects of any given armed conflict not to be relevant to its operational ones..."<sup>68</sup> This premise becomes even more important as the nature of war itself changes. Arquilla and Rondfelt propose that this concept is particularly applicable to operational support organizations:

On the other hand, echelon above division (EAD) combat service support functions may well turn out to be organized more as networks, because there is somewhat less time urgency involved and commanders can be a bit more proactive.<sup>69</sup>

Whereas van Creveld proposes customization, Eccles' argument is more compelling by seeking harmonization with the operation being supported. If hierarchy and authority constructs are limited by traditional organizational relationships, so too will be the solutions to an appropriate organizational design. With an organization as complex and as necessary as CANOSCOM, it is quite probable that more sophisticated models particularly suited for operational support will be required to be used in order to describe the organizational relationships to other operational support partners within the CF and DND.

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<sup>67</sup> George A. Marcoulides and Ronald H. Heck, "Organizational Culture and Performance: Proposing and Testing a Model" ..., 210.

<sup>68</sup> Martin van Creveld, *Command in War* (Cambridge, MA: Harvard University Press, 1985), 262. Note that the original text where "control" is inserted reads "command", but contextually it is evident that "control" was better suited for van Creveld's intent and thus inserted to avoid confusion. Even an authority such as van Creveld confuses the two.

<sup>69</sup> *Ibid.*..., 301.

## CONTROL BY PROCESS

Starting from first principles of organizational theory, there are four enduring qualities to any organization: organizations exist to accomplish production-related and economic goals; there is one best way for the organization to structure for production, found through systematic, scientific inquiry; production is maximized through specialization and division of labour; and people and organizations act in accordance with rational economic principles.<sup>70</sup> This framework holds no real surprises, even after applying a liberal interpretation of ‘economic’ in the broader sense of the word. It does, however, provide one perspective from which to consider future discussion.

A more developed concept of relevance to CANOSCOM is provided by a pair of authors who distill the four principal activities of an organization in a slightly different way. Organizations they find, keep, transform, and distribute material, products, people, and information, all in different proportions.<sup>71</sup> This updated conceptual construct recognizes the multiple means whereby entities within the organization define the hierarchy and authority relationships. Mintzberg and Van Der Heyden suggest that instead of merely using the organization’s typically pyramid-shaped organization chart to describe what and how it works, organizations can be mapped using a chain, independent set, hub, or web and combinations thereof. This process not only allows for process analysis, but also allows greater flexibility to design and describe various acceptable structures. Within CANOSCOM there seems to be a beneficial application of this concept through the use of a traditional organization chart, plus the now infamous “pizza

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<sup>70</sup> Jay M. Shafritz, J. Steven Ott, and Yon Suk Jang, *Classics of Organization Theory...*, 29.

<sup>71</sup> Henry Mintzberg and Ludo Van Der Heyden, "Taking a Closer Look- Re-Viewing the Organization. Is It a Chain, a Hub or a Web?" *Ivey Business Journal*, (September/October 2000) [journal on-line]; 1-4.

wheel” representation used to depict the slices of expertise within the Operations and Plans group. It may serve a beneficial purpose for future reviews of CF command and control to make use of such a process to ensure the function of CANOSCOM is accurately reflected and subsequently optimized.

Even if the organization is correctly mapped, CANOSCOM remains fundamentally a bureaucracy within the CF and DND, and subject to similar penchant for controls. One writer commenting on the pitfalls of bureaucracy laments the following:

In practice, the overhead [staff] agencies are often obstacles to efficient management in government....The combination of complexity, obscurity, and tedium means that overhead agencies can maintain an enviable isolation from accountability....Overhead agencies use a variety of tactics to frustrate the public manager and maintain control over money and people....The more rigid the overhead system, the more hurdles there are....In such systems the merits all too often become irrelevant as the process becomes an end in itself....For the seasoned public manager it is the part of the job that either finally wears you down to acquiescence or constantly recharges your batteries through sheer provocation.<sup>72</sup>

This observation is consistent with studies of bureaucracies that instituted control systems that became ‘constraint-oriented’ rather than ‘service-oriented.’<sup>73</sup> This condition is not unique to civilian agencies. For instance, the control system in place for regulating logistic support in United Nations (UN) peacekeeping operations is notoriously ineffective:

Logistics are provided by an independent UN organization with restrictive rules irrelevant for the peace mission. The procurement process is slow, cumbersome and unresponsive, and commanders are consequently forced to spend time on field improvisation to compensate for lack of support.<sup>74</sup>

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<sup>72</sup> Michael Barzelay and Babak J. Armajani, *Breaking Through Bureaucracy- A New Vision for Managing in Government* (Los Angeles: University of California Press, 1992), xiv.

<sup>73</sup> Ibid..., 6.

<sup>74</sup> D. Alberts, *Command and Control in Peace Operations: Workshop 3. Center for Advanced Command Concepts and Technology*. (Washington, DC, National Defense University, 1995), 15 quoted in Carol McCann and Ross Pigeau, "Taking Command of C2", *Second International Symposium Proceedings on Command and Control Research and Technology*. (Market Bosworth, UK, 1996), 7.



In the case of UN logistic support, it seems to be suggested that an imbalance between strong authority and low accountability coupled with complex controls has paralyzed the system to the detriment of operational effectiveness. This example serves as a warning to those who envision boundless controls for CANOSCOM.

Among the reasons why it is so dangerous to rely exclusively on control is because of the attempt to neutralize human factors. Some writers have theorized that successful military organizations and battlefield formations have been determined by available technical solutions to their command and control systems.<sup>75</sup> This view may have merit, except for the emphasis on technology. Command and control, including organizational structure, is essential to make any organization effective. Technology simply enables or limits the means of effective command and control. Another author offers that a failure to consider the social and organizational innovations necessary because of technological superiority is one of the most dangerous outcomes from a rush towards the Revolution of Military Affairs bandwagon.<sup>76</sup> Nichiporuk and Builder contend that the social consequences of the information revolution, particularly within organizations, will be profound. Hierarchies will be weakened, replaced by network based alternative forms.<sup>77</sup> Futurists Arquilla and Rondfeldt go so far to propose:

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<sup>75</sup> Norman C. Davis, "An Information-Based Revolution in Military Affairs", in *In Athena's Camp - Preparing for Conflict in the Information Age*, ed John Arquilla and David Rondfeldt, (Santa Monica, CA: RAND, 1997), 91.

<sup>76</sup> Stephen J. Blank, "Preparing for the Next War: Reflections on the Revolution in Military Affairs", in *In Athena's Camp - Preparing for Conflict in the Information Age*, ed John Arquilla and David Rondfeldt, (Santa Monica, CA: RAND, 1997), 69, 75.

<sup>77</sup> Brian Nichiporuk and Carl H. Builder, "Societal Implications", in *In Athena's Camp - Preparing for Conflict in the Information Age*, ed John Arquilla and David Rondfeldt, (Santa Monica, CA: RAND, 1997), 301.

For governments and militaries, the challenge will be to develop hybrids in which "all channel" networks are fitted to flattened hierarchies. The major benefits may accrue in the areas of interagency and inter-service cooperation. Since militaries must retain hierarchical command structures at their core, their hybrids should retain - yet flatten - the residual hierarchy, while allowing dispersed maneuver "nodes" to have direct, all-channel contact with each other, and with the higher command.<sup>78</sup>

A solution to the organizational process challenges would greatly enhance CANOSCOM's C2. This line of thinking suggests that rather than simply adapting to and overcoming organizational weaknesses, innovative processes for operational support are required that will allow appropriate controls while supporting the command function.

Therefore, the challenges for CANOSCOM are complex, although not unique to the study of organizational design. While organizational structure and process as aspects of control are important, if not critical, it is also evident that control is not a panacea. Regardless of attempts to distill decisions and activity into an alchemic control algorithm, there are limitations to the effectiveness of control. The principal benefit of a good control system is that it reduces uncertainty. Such a system, however flexible it may be, also creates its own difficulties. Managing conflict in the global security environment consists of elements beyond the influence of any control system, including weather, unconventional adversaries, and in the case of operational support forces, disruptions at the military/industrial interface.<sup>79</sup> These unavoidable realities of ambiguity and

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<sup>78</sup> John Arquilla and David Rondfeldt, "Looking Ahead: Preparing for Information-Age Conflict", in *In Athena's Camp - Preparing for Conflict in the Information Age*, ed John Arquilla and David Rondfeldt, (Santa Monica, CA: RAND, 1997), 461-465. Another proposed way ahead is a report prepared by the RAND Corp for the USAF that was intended to guide the combat support architecture at the operational command level. The report includes operational analysis of Close Support, proscriptive changes in planning processes, training, and organization. Readers will find the observations and solutions applicable. James Leftwich, et al, "Supporting Expeditionary Aerospace Forces: An Operational Architecture for Combat Support Execution Planning and Control", (Santa Monica, CA: RAND, 2002).

<sup>79</sup> Ross Pigeau and Carroll McCann, *Re-defining Command and Control*. (Toronto, ON, 1998), 12.

uncertainty need to be factored into the ever-improving control structures in CANOSCOM. Van Creveld cites Clausewitz in *Vom Kriege* in stating that the greater the efficiency of a system, the greater the effects of friction.<sup>80</sup> As will be seen later, friction may work to the commander's benefit if used to his advantage. In short, control systems can become counter-productive, particularly in a bureaucracy such as DND/CF.

In conclusion, while necessary, control in and of itself has its limitations, particularly in correctly structuring the organization. The organizational construct in which CANOSCOM operates is complex, which either requires wary navigation around the pitfalls of centralization and dual command or innovate models customized for operational support. Finally, there should be strong considerations for restraint towards the natural tendency to impose complex structure and process as this action impedes the commander's ability to leverage friction in his favour.<sup>81</sup> Perhaps the best counter to control that does not diminish mission success is command.

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<sup>80</sup> Martin van Creveld, *On Future War...*, 107,108.

<sup>81</sup> Carol McCann and Ross Pigeau, "Taking Command of C2" ..., 9.

### CHAPTER 3 - SEEKING COMMAND OF C2

Thus far, given the remarkable success of the CF in conducting operations globally, including the heavy operational support challenges inherent with a 11,000 km line of communication to Afghanistan, the organizational controls in which CANOSCOM operates may appear fragile but nevertheless have proven effective. Skepticism remains, however, as to whether this success is because of or in spite of the new construct. Further, if Eccles is to be accepted, the organizational controls currently in place may be simply a function of personalities, in this case, highly effective and cooperative personalities, that overcome any weaknesses in structure. If the controls in place are marginally effective, then it remains to examine the predominant dimension of command in CANOSCOM as a determining factor of long term sustainability. This chapter will illustrate how command influences the command and control (C2) of CANOSCOM and assess command effectiveness using the *Balanced Command Envelope* model developed by McCann and Pigeau. This chapter will culminate by examining how the command environment supports the establishment of common intent within CANOSCOM.

#### COMMAND EFFECTIVENESS ASSESSMENT

Perhaps the greatest contribution of McCann and Pigeau's research is establishing the human factors prevalent in command as a science as well as an art.<sup>82</sup> This finding is evident in the phrase within their definition of command as "the creative expression of human will." At heart, command is a human activity based upon relationships and mutual confidence. To refer to the earlier definitions of command and control, the reader will recall that whereas control strives to extinguish uncertainty, adept command exploits

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<sup>82</sup> Carol McCann and Ross Pigeau, "Taking Command of C2" ..., 9.

uncertain conditions.<sup>83</sup> Although control is an enabling function of command, command nonetheless remains the supreme of the two. Van Creveld, in *Future War* proposes that two classic military control measures, regular reports and standard operating procedures, really only constrains an organization.<sup>84</sup> For all the shortcomings of control, there is command. The advantage of considering command as a science as well as an art is that a scientific framework provides a more objective means of effectiveness measurement.

It is suggested that Pigeau and McCann's *Balanced Command Envelope* model is well suited as a rubric to assess the command effectiveness within CANOSCOM. They propose that there are three principal dimensions of command; authority, responsibility, and competency that form a *command space*. At the risk of attempting to summarize at least twelve years of research and writing into a paragraph, a significant conclusion by Pigeau and McCann is that there is an optimum balance of each of these three dimensions extending in a diagonally linear fashion. This zone is labeled a *Balanced Command Envelope*.<sup>85</sup> "We hypothesise that imbalances and misalignments in the three Command dimensions will create tensions that can adversely affect Command effectiveness and potential if ignored."<sup>86</sup> To apply this scientific method to command, the *Balanced Command Envelope* model will be used as an idealized rubric against which CANOSCOM will be measured for command effectiveness. Although the model was intended as a guide for how military organizations should employ their leaders as

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<sup>83</sup> Martin van Creveld, *On Future War*..., 110.

<sup>84</sup> *Ibid*..., 109.

<sup>85</sup> Carol McCann and Ross Pigeau, "Clarifying the Concepts of Control and Command." US Naval War College. Proceedings of the 1999 Command and Control Research and Technology Symposium (Newport, RI, 1999), photocopied, 9.

<sup>86</sup> *Ibid*..., 12.

individuals, it is submitted that the same principles could apply to a commander's headquarters and subordinate commanders as an extension of this leadership.

## **AUTHORITY**

The first dimension of the model is authority. To the uninitiated, authority is the intuitive dimension of command. Authority is ultimately the right to issue directives and the power to exact obedience<sup>87</sup> that comes in two forms: the first is official, or formal, and the second being personal or earned authority.<sup>88</sup> Official authority is the form most readers will be familiar with: a written or verbal declaration from a legitimate source conferring responsibility, and its complementary quality accountability, upon an individual. Indeed, accountability and responsibility are closely linked when considering effective command.

CANOSCOM's formal authority is derived from the initiating directive in the CF-wide message promulgated in the CDS' initial planning directive and subsequent correspondence. This mandate includes: 1) coordinate the generation of task tailored operational support organizations for employment in theatre activation and opening, operation sustainment and mission closeout; 2) support the operational commanders in planning and preparing for operations, including the execution of operational support at the national level; 3) reach-back and coordinate the provision of national and strategic support;<sup>89</sup> and 4) help shape Support capabilities for CF Operations.<sup>90</sup> This directive

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<sup>87</sup> Jay M. Shafritz, J. Steven Ott, and Yon Suk Jang, *Classics of Organization Theory...*, 49.

<sup>88</sup> Ross Pigeau and Carol McCann, "Putting 'Command' Back into Command and Control: The Human Perspective", *Proceedings of Command and Control Conference* (Ottawa: Canadian Defence Preparedness Association, 1995), photocopied, 6.

<sup>89</sup> General R.J. Hillier, *CDS Organization Order - Canadian Operational Support Command (CANOSCOM)*. National Defence Headquarters, Ottawa: CANFORGEN 013/06 CDS 009/09, 011330Z FEB 06.

clearly articulates the authority and responsibility assigned to CANOSCOM. From these explicit tasks, there is force generation authority, force employment responsibility, and force development responsibility. It is noteworthy that three of four tasks, with the exception of the first, are of the coordinating or supporting nature rather than assigning CANOSCOM as the sole authority.

Official authority is important, especially in a bureaucracy, but it is only one part of an individual's or organization's authority, the other being personal authority. Pigeau and McCann are unequivocal on the importance of personal authority in stating that "Without personal authority there can be no effective command."<sup>91</sup> This truism is reflected in the CF Leadership Manual<sup>92</sup> as well as texts used in the US Army:

History has shown that... moral [personal] authority is the commander's most effective means to exercise command. American soldiers fight best when their unit is well trained, properly equipped, and well led. Legal authority and administrative threats have seldom motivated American soldiers to fight and die for their country.<sup>93</sup>

This statement underscores the idea that regardless of the controls in place or the official authority in the leadership, effective command ultimately depends on the human element expressed as the leadership of the commander exercised through his headquarters and subordinate commanders. It is at best a challenge for CANOSCOM leadership to gain

<sup>90</sup> General R.J. Hillier, *CANOSCOM Command and Control Authority*. National Defence Headquarters, Ottawa: CANFORGEN 156/06 CDS 060/06, 250955Z OCT 06.

<sup>91</sup> Ross Pigeau and Carol McCann, "Putting 'Command' Back into Command and Control: The Human Perspective"..., 8.

<sup>92</sup> Canada. Department of National Defence, A-PA-005-000/AP-004 *Leadership in the Canadian Forces - Conceptual Foundations* (Ottawa: DND Canada, 2005).

<sup>93</sup> *Command* (Student Text 22-101) (Fort Leavenworth, KS: US Army Command and General Staff College, 1995), 1, quoted in Ross Pigeau and Carol McCann, "Putting 'Command' Back into Command and Control: The Human Perspective", *Proceedings of Command and Control Conference*. (Ottawa, Canadian Defence Preparedness Association, 1995), photocopied, 8.

personal authority over operational support units not permanently assigned to CANOSCOM. This situation weakens the authority of CANOSCOM and therefore also weakens the effectiveness of command.

Subsequent to the initial direction from the CDS, CANOSCOM was given the authority to command all routine operations conducted in support of operations such as intermediate staging bases (ISBs) and teams in support of personnel, vehicles, and materiel rotation and movement.<sup>94</sup> Compared with the CEFCOM's responsibility for all international operations, the authority for ISBs conflicts with CANOSCOM's authority and interferes with the concept of unity of command.

Domestically, the authority chains become even more tangled. According to its assigned roles, CANADACOM is required to plan and coordinate operational support for delivery by CANOSCOM and the Regional Joint Task Force (RJTF) Commander. In the current construct, it is important to observe that every RJTF except one is also a subordinate headquarters to an Environmental Command, the principal authority for force generation. A situation could arise where CANADACOM solicits support from CANOSCOM for support for a RJTF, who then in turn could end up inadvertently seeking the capability from the same formation that originated the request. However clear the lanes may appear to be in Ottawa, the dual authority situation at subordinate formation headquarters demonstrate that the new construct poses significant difficulties that must be managed.

In the military, authority is typically enunciated through the use of standard command and control relationship terminology. This terminology delineates the degree

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<sup>94</sup> General R.J. Hillier, *CANOSCOM Role in Shaping Support to CF Operations*. National Defence Headquarters, Ottawa: CANFORGEN 125/06 CDS 045/06, 040853Z AUG 06.



of authority of headquarters over units. Without the necessary authority, joint operational support in the CF could begin to resemble NATO, encumbered with the tradition of individual national responsibility and voluntary obligations for collective operational support. As told by one CF officer with NATO staff experience, instead of operational command (OPCOM) or operational control (OPCON), what the staff often receives is “OPCOULD, OPMIGHT, OPWILL, OPWONT, or sometimes even OPYOURS.”<sup>95</sup>

Perhaps the C2 requirement for CANOSCOM requires an alternative to the C2 relationship matrix such as the doctrinal formalization of the concept of supported or supporting commander such as that in use in the US Marine Corps. This would clarify authorities during force development, force generation, and force employment phases.<sup>96</sup>

## **RESPONSIBILITY**

Besides authority, the second dimension of command is responsibility, which serves as a source of motivation and resolve to succeed.<sup>97</sup> The extrinsic manifestation of responsibility is accountability. Pigeau and McCann provide a model that concludes that authority relates directly to responsibility to determine the degree of effectiveness of command. Only with the authority to act and a corresponding responsibility and accountability is there balanced command.<sup>98</sup> Currently, there appears to be discord between the responsibility put upon CANOSCOM and the actual authority to execute

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<sup>95</sup> Lieutenant-Colonel Tim Marsella, "Land Component Sustainment Operations" (lecture, Canadian Forces College, Toronto, ON, 8 December, 2006), with permission.

<sup>96</sup> United States. Marine Corps Operations, *MCDP 1-0, 142 0000 1400*.(Washington, DC: Department of the Navy, Marine Corps Headquarters, 1998), 2-6.

<sup>97</sup> Carol McCann and Ross Pigeau, "Clarifying the Concepts of Control and Command.", 9.

<sup>98</sup> Ross Pigeau and Carol McCann, "Putting 'Command' Back into Command and Control: The Human Perspective"..., 7. The other three quadrants of the model are as follows: No authority to act and no responsibility for actions results in an inability to command. Responsibility for actions without the necessary authority results in ineffective command. The authority to act without responsibility for the outcome is dangerous command.

necessary actions. While responsibility empowers, it can also be a heavy burden for leadership. Shafritz, et al observe: “Generally, responsibility is feared as much as authority is sought after, and fear of responsibility paralyzes much initiative and destroys many good qualities.”<sup>99</sup> One suggestion to avoid this reluctance towards responsibility proposed by Barzelay and Armajani is to shift from enforcing responsibility to building accountability. In the old bureaucratic paradigm, a key role of administrators was to use their authority to enforce responsibility upon their subordinates. A more effective means would be to make them feel accountable.<sup>100</sup> To be given control over resources and be held accountable over the results responds to the natural human inclination for job enrichment and psychological growth.<sup>101</sup> This concept likely applies to the commanders of the three operational commands as much as CANOSCOM in that there is a greater sense of accountability if they ‘own’ their own supporting forces. While CANOSCOM leaders and staff in all likelihood wish to foster this natural inclination to assume accountability, it is suggested that it will be increasingly difficult and likely frustrating without the appropriate authority to do so.

In terms of responsibility, it seems that the CF has resorted to the time honoured management practice of assigning a single entity unto which is cast the responsibility for solving a problem or group integrated problems.<sup>102</sup> The common phrase currently in

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<sup>99</sup> Jay M. Shafritz, J. Steven Ott, and Yon Suk Jang, *Classics of Organization Theory* (Belmont, CA: Thomson Wadsworth, 2005), 49.

<sup>100</sup> Michael Barzelay and Babak J. Armajani, *Breaking Through Bureaucracy...*, 128.

<sup>101</sup> David Zussman and Jak Jabes, *The Vertical Solitude: Managing in the Public Sector* (Halifax: The Institute for Research on Public Policy, 1989), 170.

<sup>102</sup> Michael Barzelay and Babak J. Armajani, *Breaking Through Bureaucracy...*, 105.

vogue in the senior CF echelon is that with CANOSCOM, the CDS has “one dog to kick” if there are any operational support problems.<sup>103</sup> This term implies that not only has CANOSCOM assumed responsibility for its tasks, but there are also immediate accountabilities when operational support fails. As will be shown, several agencies have the authority for generating operational support; yet, CANOSCOM bears the brunt of the responsibility and accountability alone.

For example, the ECS (Army, Navy, and Air Force Commanders) as force generators also have responsibilities for operational support capabilities, although without the same measure of accountability. Force generation is nearly the only remaining responsibility left with the ECS. The ECS act as the managing authority for specific military occupations, including many operational support occupations. In addition to individual training, ECS also manage and conduct collective training for support units in preparation for operations. Quite correctly, developing capable operational support forces is not the ECS’ first priority; what comes first is component-specific combat capability. Although CANOSCOM is uniquely responsible for unit training for operational support units permanently assigned to CANOSCOM, there remains a fundamental conflict. This conflict in authority is well recognized in organizational theory as a limitation to perform and make correct decisions.<sup>104</sup> Without adequate authority into readiness preparations, establishing training requirements, and awareness of operational support unit readiness levels, CANOSCOM is hindered in its foremost mission of force generation.

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<sup>103</sup> Major-General D. Benjamin, Commander CANOSCOM, "CANOSCOM" (lecture, Canadian Forces College, Toronto, ON, 8 January, 2007), with permission.

<sup>104</sup> Jay M. Shafritz, J. Steven Ott, and Yon Suk Jang, *Classics of Organization Theory...*, 121.

Another element of unbalanced authority and responsibility that diminishes effective command is the lack of authority over individual occupational training. The management of the so-called “purple” pan-environmental support trades has been shifted from headquarters to headquarters as the CF evolved beyond unification.<sup>105</sup> Currently, the senior officer who oversees general support training is the Chief of Military Personnel, who has oversight responsibilities far broader than just operational support training. All general support training is managed in this manner except for certain exceptions that have direct reporting relationships to the functional authority such as the Health Services and Military Police schools.<sup>106</sup>

The Chief of Land Staff recognized that in order to achieve goals for which he is responsible, he needed more formal authorities over training. He subsequently initiated a proposal to take on Managing Authority for some land operation employable trades [the words “general support” conspicuously absent] and to move certain training establishments under his authority:

The authority to direct new training needs for land operations needs to reside within the element of the CF held accountable for the overall delivery of land operations competency: LFC [Land Force Command]. Further, land schools are nested in our doctrine hierarchy as the centres of excellence responsible for the development of tactics, techniques and procedures - the lowest level doctrine that informs land operations at the levels...we are operating at today. This vertical integration and authority to direct and adapt TTPs [tactics, techniques, procedures] is currently fragmented and needs to be unified.<sup>107</sup>

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<sup>105</sup> This includes allocation of support training establishments to Training Command, to the since disbanded Canadian Forces Recruiting, Education, and Training System under the Support Training Group, to the now-defunct ADM (HR-Mil), back to the Canadian Defence Academy and various ECS.

<sup>106</sup> Equally disruptive, specialist Branches have in the past tried to influence support training. With neither resources to support curriculum changes nor accountability for training outcomes, this approach also has not worked.

<sup>107</sup> Lieutenant-General A.B. Leslie *Realignment of Managing Authority Responsibilities for Land Operation Employable Trades*, file 4500 -1 (DAT), 30 October, 2006.

In the text above, elements of competency, of authority, and of responsibility are clearly articulated. However, LFC is not the only beneficiary of support trades. The possibility exists that LFC will now generate a capability that is tailored to one environment alone. If CANOSCOM is an organization with definite responsibilities for the force generation of operational support forces to operational commanders, the lack of direct authority over support training is troubling because one possible outcome is that the CF and CANOSCOM will have robust specialist skills required for joint operations diluted down to the minimum needs of the Army.<sup>108</sup>

Another conflict is an apparent duplication of roles. At first glance, principal staff (J1 Personnel, J4 Logistics, Military Engineer, J6 Signals, Chief Surgeon, etc) in the three operational commands have similar responsibilities as those found in CANOSCOM. For example, the J4 Support in CANADACOM is responsible to the Commander to “plan, coordinate and oversee the execution of operational support for CANADACOM operations”; yet operational support is what CANOSCOM is all about.<sup>109</sup> Although the differences are subtle, there is an apparent overlap in responsibilities with CANOSCOM, and anecdotally, conflict in perceived authority from the field as well.

## **COMPETENCY**

While it is clear that responsibility reinforces and is reinforced by authority in order to achieve effective command the description of the command space is incomplete

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<sup>108</sup> The transfer for managing authority as well as responsibility for various Communications, Land Electrical and Mechanical Engineering, and Military Engineering schools has been approved by Armed Forces Council effective 17 January, 2007.

<sup>109</sup> Canada Command, “Welcome to J4 Canada Command”, [http://Canadacom.mil.ca/j4/en/J4\\_home\\_e.asp](http://Canadacom.mil.ca/j4/en/J4_home_e.asp); Intranet: accessed 22 January 2007.

without mention of competency.<sup>110</sup> It is the competency dimension of command that makes the *Balanced Command Envelope* applicable to all levels of command.<sup>111</sup> Eccles relates the dimension of competency to CANOSCOM's effectiveness with the following observation:

The authority to exercise command and control of logistics carries with it the equally important reciprocal obligation to exercise competence, sound judgment, and restraint in the exercise of that control.<sup>112</sup>

In the case of CANOSCOM, command involves competency in a wide range of highly technical domains. It has been evident that CANOSCOM staff has a depth of professional competence and operational experience as shown by gaining stakeholder cooperation in the midst of a radical organizational transformation to deliver operational support to current operations that feature hereto unsurpassed expectations. It is likely, however, that the level of competency in CANOSCOM will decline due to the lack of an institutionalized process to capture this corporate knowledge and to develop new capabilities. As a previous US Chief of Air Staff noted:

Just as important to the expeditionary culture is the fundamental understanding that we organize, deploy, and employ using organizational principles based on doctrine, not ad hoc command arrangements....In most cases we don't even notice doctrinal negligence because our airmen are such superb operators- we'll get the job done even in a lousy organization. We need to fix this for them....Write it down and publish it.<sup>113</sup>

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<sup>110</sup> Carol McCann and Ross Pigeau, "Clarifying the Concepts of Control and Command." ..., 7. Competency is described by McCann and Pigeau as consisting of physical, intellectual, emotional, and interpersonal capabilities.

<sup>111</sup> This model applies equally well to a junior leader with balanced command as a senior leader with balanced command: the difference is competency and increased measures of authority and responsibility.

<sup>112</sup> Henry E. Eccles, *Logistics in the National Defense*...,210.

<sup>113</sup> General John P. Jumper, US Chief of Air Staff, "Chief's Sight Picture 31 January 2003," <http://www.af.mil/lib/sight>; Internet; accessed 22 November, 2006, quoted in Major General Terry L. Gabreski, USAF, James A. Leftwich, Colonel (Dr.) Robert Tripp, USAF, Ret'd, Dr. C. Robert Roll Jr., Major Cauley von Hoffman. "Command and Control Doctrine for Combat Support - Strategic- and

This sentiment applies to CANOSCOM as well. Several writers such as Schrady and van Creveld have observed the lack of attention logistics theory and development receives between conflicts.<sup>114</sup> Without the same intellectual rigour applied to practical outcomes of experience as the combat force, the CF is destined to repeat mistakes to the detriment of command competency, and further challenging command effectiveness. CANOSCOM can likely leverage existing CF and DND knowledge management processes as well as solicit the use of Departmental research and development capabilities towards this end. Without robust measures in place, existing strong competencies will likely degrade in CANOSCOM, eventually to a point on the competency axis outside of the *Balanced Command Envelope*. While not an immediate shortcoming, there are growing concerns in this third dimension of the model with regards to the future command effectiveness in CANOSCOM.

## **THE ROLE OF INTENT IN C2**

There remains a possibility that incomplete control and problematic command can synergistically combine into effective command and control (C2). Pigeau and McCann define of C2 as “the establishment of common intent and the subsequent transformation of intent into coordinated action.” They reinforce the concept of ‘intent’ as being critical to C2, and consists of two parts: explicit (public) and implicit (personal).<sup>115</sup> Pigeau and McCann offer that although explicit intent is often easier to convey through spoken and

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Operational-Level Concepts for Supporting the Air and Space Expeditionary Force.” *Air & Space Power Journal* (Spring 2003), 8.

<sup>114</sup> D.A. Schrady, “Combatant Logistics Command and Control for the Joint Forces Commander” (Monterey, CA: The Institute for Joint Warfare Analysis - Naval Postgraduate School, 1998), 15.

<sup>115</sup> Carol McCann and Ross Pigeau, "Taking Command of C2" ..., 3.

written communication, there is always an element of implicit intent in every message. Pigeau and McCann also contend that command creates and exploits implicit intent such that it will serve during times when explicit intent is not possible, and is therefore more important of the two types.<sup>116</sup>

The contention above implies that for effective C2, there needs to be common intent with an emphasis on implicit intent. In a military context, this requires persistent leadership on the part of the commander and by extension his subordinate chain of command.

The ultimate benefit of establishing a climate of trust for Command is the fusion of individual humans each with their own skills, temperaments and experiences, into a single team that shares the same model of the military situation, has a common understanding of the mission and expresses the collective will to achieve it.<sup>117</sup>

Therefore, intent becomes an internalized force that binds individuals together with diminished reliance upon external controls. This concept is also reinforced in other non-military contexts. A model proposed by author and successful business leader Joseph L. Bower for a flexible organization dubbed the “Velcro Organization” that is cohesive and workable when in place, but capable of being easily re-arranged when circumstances and strategy call for it.<sup>118</sup> The only way such an organization could exist is when there are

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<sup>116</sup> Ross Pigeau and Caroll McCann, *Re-defining Command and Control*. (Toronto, ON, 1998), 5.

<sup>117</sup> Ross Pigeau and Carol McCann, "Putting 'Command' Back into Command and Control: The Human Perspective" ..., 9.

<sup>118</sup> Joseph L. Bower, "Building the Velcro Organization: Creating Value Through Integration and Maintaining Organization-wide Efficiency" *Ivey Business Journal*, (November/December 2003); <http://www.iveybusinessjournal.com/article.asp>. Internet: accessed 29 September 2006, 1.



capabilities in place such as internalized corporate objectives, trust, and a positive ethical climate.<sup>119</sup> Jack Welch, renowned CEO of General Electric observed:

You don't have to buy in to GE's system in order to understand that if your company is managed by an encrusted bureaucracy, if it is overstaffed, and if the individual units and functions are less than competitive, you can't make progress through sophisticated organizational arrangements.<sup>120</sup>

It is submitted that the approach described above of using flexible and temporary cross-organizational cooperation requires an organization that relies upon shared intent more than through control. This situation is particularly true during the current transition period where the CANOSCOM Commander is also the champion to the change process.<sup>121</sup> CANOSCOM relies extensively on the ability to generate mission specific support elements from operational support units dispersed throughout the nation and in some cases, are not even under the CANOSCOM Commander's normal chain of command.

In an organization such as CANOSCOM that has to compete with existing Branch cultures as well as service cultures found in the three environmental commanders, implicit intent is likely difficult to achieve outside the formations established within CANOSCOM without infringing on the domains of the environmental commanders. The recent establishment of CANOSCOM badges, crests, and other symbols may contribute towards creating a shared culture, but the significance of these devices typically takes time for members to internalize. One possible solution is to enlist the assistance of

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<sup>119</sup> *Ibid.*..., 6.

<sup>120</sup> *Ibid.*..., 6.

<sup>121</sup> J.M. Bud Burbee, "The Principal and Educational Change", (Master's thesis, University of British Columbia, 1985), 24.

existing Branch infrastructures to promote a common intent by proxy rather than viewing them as parochial tribal anachronisms within the CF.

To follow previously established logic then, without implicit intent, there is only superficial common intent. Without common intent, there is no true command. Without command, there is no effective command and control. Without effective command and control, CANOSCOM will become ineffective, increasingly irrelevant, and thus difficult to sustain. The issue of establishing common intent is left as a challenge for the leadership of CANOSCOM.

Therefore, although effective command was supposed to counter the effects of a complex and ever-increasingly control-oriented organization, it appears that the function of command is equally challenging in CANOSCOM. In the command effectiveness dimensions of competency, authority, and responsibility, there are several examples of serious breaches in the *Balanced Command Envelope* as an objective rubric for command effectiveness. Problematic command, combined with a CF organizational structure that features key operational support stakeholders external to CANOSCOM, inhibits the development of a shared intent. As the establishment of common intent to achieve coordinated action is the very definition of C2, the conclusion is that there are significant challenges for the sustainability of the C2 of CANOSCOM.

## CONCLUSION

If solutions are found for the unresolved C2 challenges, there are many possibilities that bear future examination as to how CANOSCOM could enhance CF capabilities. For example, given the skill sets within the operational support community, CANOSCOM could provide the balance of forces, including a command element, for disaster relief and post-conflict reconstruction operations. Communicators, medical personnel, logisticians, military police, and engineers are arguably well suited for such operations rather than the well-intended but essentially layman-led Civil-Military Cooperation (CIMIC) efforts currently in use. Further, it is not beyond the realm of possibility that humanitarian assistance and nation building become discrete lines of operations in a counter-insurgency campaign. The capabilities within CANOSCOM could generate a force that serves as a lead role rather than just a supporting function.

A second potential venture is to examine the ongoing sustainment transformation efforts in NATO and elsewhere with a view towards eventual Canadian command of a multi-national support component. With the expansion of NATO, opportunities for Canadian-led Standing Naval Groups or Multi-national Brigades are becoming less frequent. Leading a multi-national operational support formation builds CF capacity for command and enables Canadian influence into future NATO development.

These areas of future study are but distant ambitions without the immediate attention to critical command and control challenges in CANOSCOM. Despite the apparent successes of CANOSCOM after approximately a year since its creation, weaknesses in command and control have the potential to jeopardize its sustainability. While critics of CANOSCOM suggest the problem is the organization itself, history has

shown that joint operational support is important and has consistently been a part of major military transformation efforts. In fact, a joint operational support command remains a decisive point to reach the articulated end-state of CF Transformation.

However, unusual command and control constructs for CANOSCOM has drawn criticism to the command to the extent that its very existence may be questioned. If command and control challenges are not addressed, CANOSCOM will become irrelevant and therefore unsustainable as increasingly complex control mechanisms are put in place to compensate for an inability to establish effective command. As the command and control of CANOSCOM is based on principles of CF Transformation, the failure of CANOSCOM as a litmus test would have much broader implications for the CF.

Modern armed forces with a heavy dependence upon technologically based C2 may tend towards control-based solutions. While there are many control mechanisms such as structure that may be suitable for CANOSCOM, it has been shown that control-oriented organizations, especially complex ones, can be limiting and tend to have an under-appreciation for human factors. Therefore, while it may prove beneficial to continue to tinker with control processes and organizational constructs, senior decision makers within the CF and DND must recognize that control has its limitations that can only be overcome through effective command.

Command, as the creative expression of human will, should theoretically fill the gaps left by control. As a way of measuring effective command, Pigeau and McCann's *Balanced Command Envelope* model which applies to individual leaders can perhaps be used for CANOSCOM as a rubric for improved command and control measures. Using this model, it is clear that there is an imbalance between authority and responsibility in

several instances. Further, without formal knowledge management practices in place, the third dimension of competency will erode with time. While control-oriented issues may be surmounted by effective command, there are simply too concerns with regards to command effectiveness to consider CANOSCOM a sustained solution for joint operational support. Therefore, while the function of command may overcome deficiencies of control, there remains some challenging work ahead to achieve effective C2.

Fortunately, C2 has been a focus of CF Transformation design and validation efforts to date, and is arguably the easiest capability to adjust compared with other capital-intensive aspects. The ability to achieve a common intent for joint operational support, however, will be a challenge to overcome due to the aforementioned organizational control weaknesses and punctures in the *Balanced Command Envelope* rubric. Until resolutions are found for conflicting functional and command responsibilities, the faded lanes and tangled chains will persist to the detriment CANOSCOM, a transformed CF, and ultimately to Canada.

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