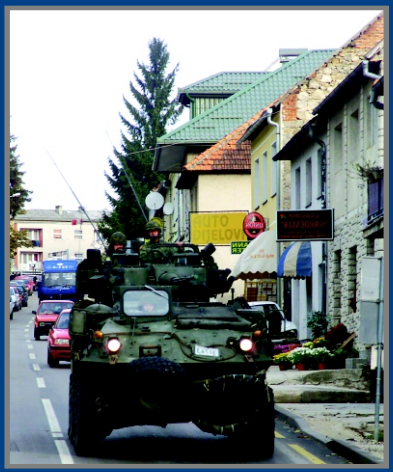
The Canadian Army Journal

8.2 Summer 2005



A Light Force Capability for the Army
Lieutenant-Colonel Dave Galea

Toward a Net-enabled Land Force: Problems and Prospects
Mr. Peter Gizewski

From Pentomic Divisions to Canada's Army of Tomorrow: A Study on Transformation
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Canadian Corps Logistics During the Last Hundred Days, August-November 1918
Lieutenant-Colonel John D. Conrad, CD

Published Quarterly

National Defence Défense National

THE CANADIAN ARMY JOURNAL
CANADA'S PROFESSIONAL JOURNAL ON ARMY ISSUES

The Canadian Army Journal, a refereed forum of ideas and issues, is the official quarterly publication of Land Force Command. This periodical is dedicated to the expression of mature professional thought on the art and science of land warfare, the dissemination and discussion of doctrinal and training concepts, as well as ideas, concepts, and opinions by all army personnel and those civilians with an interest in such matters. Articles on related subjects such as leadership, ethics, technology, and military history are also invited and presented. The Canadian Army Journal is central to the intellectual health of the Army and the production of valid future concepts, doctrine, and training policies. It serves as a vehicle for the continuing education and professional development of all ranks and personnel in the Army, as well as members from other environments, government agencies, and academia concerned with army, defence, and security affairs.

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Distribution and Subscription

The Canadian Army Journal ISSN 1713-773X is distributed throughout the Army and to select National Defence Headquarters, Maritime Command, Air Command, and Directorate of Information Systems Operations addresses.

Copies are also provided to defence-related organizations, allied armies, and members of the public and academia. Inquiries regarding distribution, subscription, and change of address are to be made to the Managing Editor. On the Internet, visit The Canadian Army Journal at http://www.army.forces.gc.ca/caj/.

Submission Guidelines

Unsolicited article manuscripts, research notes, book reviews, and points of interest are welcome. Articles should be 5000-7000 words exclusive of endnotes, research notes 1500-2500 words exclusive of endnotes, book review essays and reviews 1000-2500 words, and points of interest 1000 words or less. Articles may be submitted in either official language. Authors must include a brief biography. Authors must supply any supporting tables, charts, maps, and images, and these should not be embedded in the article text. Articles may be submitted via email or regular mail. All submissions are peer reviewed and the Managing Editor will notify contributors on the status of their submission. Further details regarding author submission guidelines are available at http://www.army.forces.gc.ca/caj/.

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On the cover: Members of the Royal Canadian Dragoon Battle Group (RCD BG) based in Zgon, Bosnia -Herzegovina, negotiate the traffic in their Coyote Armoured Vehicle in the streets of Velika Kladusa while doing a mounted patrol (Combat Camera).

A Canadian sergeant with the Canadian Afghan National Army Training Center Detachment (C ANTC Det), directs Afghan National Army (ANA) soldiers at a firebase during a raid at the Afghan National Training Center (ANTC), in Pol-e Charki, Afghanistan (CF Combat Camera).

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EDITORIAL—AN ARMY IN TRANSITION

Major Andrew B. Godefroy CD Ph.D.

In December 1991 Lieutenant-General J.C. Gervais, Commander of Force Mobile Command, penned an article on the future Army for the now defunct journal, *Canadian Defence Quarterly*. In it he stated bluntly, "The Army is undergoing what can be described as its most significant transformation since integration and unification. An emerging 'new world order,' a new defence policy, adjusted roles and tasks, the application of the total force concept, a different structure—all of these elements and others are prompting change of almost an unprecedented magnitude."

It is interesting to note that this statement is as applicable today as the Army continues its transition from old to new. In fact, it seems these days that we are an Army constantly transitioning from one posture to another, or in other words, we seem to have a constantly transforming Army. While some see this as positive or even inevitable given the increasingly rapid rate of technological evolution we're currently experiencing, others have suggested that an Army in constant transformation never actually achieves any sense of stability or effectiveness.

Current Canadian Army transformation is often situated in the context of a transitioning security environment—one that has switched from facing the 'bear' (i.e. Soviet forces in central Europe) to the 'snake,' (i.e. non-state actors/terrorists) or more recently, the 'ball of snakes' (loosely organized terrorist groups). According to some arguments the Canadian Army has been transforming for the last 16 years or so.

But it is worth asking if the bear is still an appropriate left anchor point for characterizing Canadian Army transformation. Surely our experience in the Balkans during the 1990s served as a catalyst for Army transformation/evolution before the snakes and balls of snakes became the main adversary. Therefore might it not make sense to suggest that the current Army transformation only began five or six years ago instead of sixteen?

There is little doubt that the Canadian Army has undergone considerable transformation since the end of the 1990s. A new security environment influenced by new technologies has instigated new doctrines, processes, and procedures. In fact, today the Army resembles less and less the Army of 1998, and within the next two or three years it is possible that the army will look nothing like the Army of the 1990s at all.

Over the next few months the Canadian Forces and the Canadian Army will undergo perhaps some of their greatest transformations since the Balkans. A new Office of Transformation is being stood up, as are several new Commands. New tasks are arriving, including those associated with special operations, light forces, and amphibious operations. All of this will impact the Army in different ways, and perhaps more than ever, there is a critical need for informed debate on these subjects.

This issue of the *Canadian Army Journal* looks at a number of subjects influencing current Army development. Updates and articles examine Information Operations, Light Forces, Network-Enabled Operations, the Combat Arms and Army force structures. Meanwhile, Colonel Watkin offers a counterpoint to an earlier CAJ article by Lieutenant Colonel Pat Strogran, and is followed by two articles examining past and present logistical support to deployed forces abroad. Finally, the book review section continues to expand with new titles examining a number of Army studies and issues, past, present, and future. I welcome you once again, hope you enjoy this issue, and encourage you to continue submitting material.

CORRECTION!

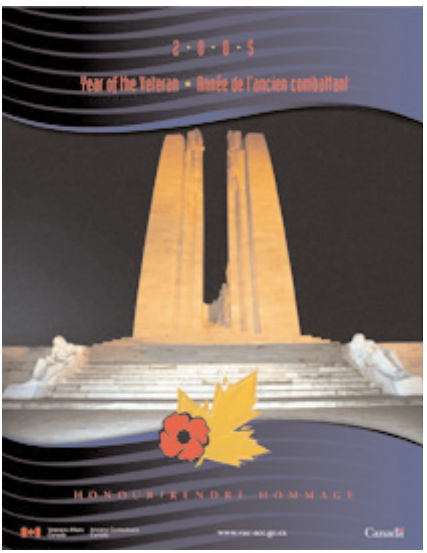
Please note that in issue 8.1 the author of the Stand Up Table Piece "The 100th Monkey: The Catalyst for the Learning Organization" was mistakenly identified as Colonel S. Appleton. The true author of this clever piece was Lieutenant Colonel Stephen McCluskey of the Directorate of Army Doctrine, and we sincerely apologize to him for the error.

A PART OF OUR HERITAGE

Historical Perspectives

Captain Steve Nolan

It is a memorial to no man, but a memorial for a nation



This year, the Canadian Forces joins the rest of Canada in celebrating the service of veterans. The Honourable Albina Guarnieri, Minister of Veterans Affairs, declared that 2005 will be dedicated to paying tribute to Canada's veterans and will be known as The Year of the Veteran. "It is our never ending mission to thank Veterans who step out of ordinary times to do the extraordinary and give our nation and other nations an endowment of peace. The Year of the Veteran will enable the Government of Canada on behalf of all Canadians to express gratitude to those whom we owe a tremendous debt, one that only can be repaid through active remembrance."

A key monument of Canadian remembrance is the Vimy Memorial. The easily recognized twin stone towers of the monument have been used in posters to help commemorate the Year of the Veteran, as this symbol and its ties to Vimy are nationally regarded links with the service and sacrifice of our Canadian veterans. However, while we celebrate the Year of the Veteran through numerous events, displays and even by the wearing of an insignia on our uniforms, it becomes increasingly obvious that Canada as a nation does not honour its veterans in a very consistent fashion. Although this article may seem a bit like "preaching to the converted" there is a deeper meaning here, not just about the sacrifice but what that sacrifice means.

According to the Concise Oxford English Dictionary, one definition of "honour" is a person or thing that brings credit. The credit that Canadian veterans earned is not found in military victories or in individual valiant actions, it is in their collective achievement for our nation. The credit they earned allows Canada to act as an independent nation: independence to act in our own best interests and not to have these interests dictated to us by friend or foe.

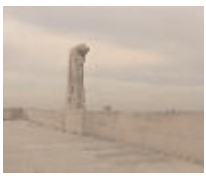
No war symbolizes the coming together of our nation more than the First World War. The Battle of Vimy Ridge has long been heralded as the "coming of age" of the nation of Canada, for in this action Canada earned a spot on the international stage. It is a matter of national pride that all Canadians share—that Canadian soldiers achieved what the soldiers of other nations had previously been unable to achieve.

Vimy Ridge was not only a victory in international eyes, it was successful in bringing about the unity of our nation; it was the first time that all four divisions of the Canadian Corps went into battle together. Soldiers from the east coast, the west coast, the prairies, the mountains, the small towns and the large cities, from Ontario and Quebec (which was the second largest provincial contributor of personnel to the war) fought and sacrificed (10,000 wounded and 3,598 dead) and collectively brought credit to Canada. Their success earned Canada a separate signature on the Versailles Peace Treaty.

The victory at Vimy allowed us the opportunity to start choosing our own path in the world. All too often though, we have relied on our allies for assistance, and this has made our ability to decide what is best for Canada subject to the influence of other nations. Although it is an independent country, Canada has maintained strong ties to our original sovereign. Throughout post-World War I history Canada has not acted alone as a military power nor has it had the capabilities or the national will to do so. We have slowly moved from under the umbrella of the British Empire to the collective security of NATO and now it appears we are dependant upon the United States for our security.

We in the army honour our veterans, and when "honour" is used in this way it means something slightly different: it means to fulfill an obligation or to keep an agreement. We honour our veterans with traditional outward symbols, like the wearing of the poppy, or conducting a ceremony or parade. More importantly, we honour our veterans by not allowing their achievement of international self-determination to be forgotten. We strive to continue the record of achievement started so long ago in order to maintain a Canada that is independent in the truest sense of the word.

The size and strength of Canada's military is not the underlying theme of this editorial; that is for the government to decide. The decisions that we make in the Army are about force structures and capabilities, specifically those capabilities that would enable us to act independently in the national interests of Canada. Relying heavily on our allies and our coalition partners has been a key aspect of Canadian doctrine for quite some time now. If the veterans of past wars earned Canada 'national credit' with their sacrifice, have we been careful with that credit or have we misspent it?



Of relevance to this installation of Historical Perspectives is the Vimy memorial itself. Designed by Canadian Walter Seymour Allward, the Vimy Memorial was completed over 70 years ago for a cost of $1.5 million. The main monument stands on Hill 145, overlooking the Canadian battlefield of 1917, at the location of the fiercest fighting. It was unveiled by King Edward VIII in 1936, who noted, *It is a memorial to no man, but a memorial for a nation*.

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DIRECTORATE OF ARMY DOCTRINE UPDATE: INFORMATION OPERATIONS DOCTRINE REVIEW

Major R. W. Bell, CD

B-GL-300-005/FP-001 *Land Force Information Operations* contains operational and tactical level doctrine used by the Army in training and operations. It is based upon the operating concept that Information Operations (IO) is a combat function that must be integrated with the other combat functions (Manoeuvre, Command, Firepower, Protection and Sustainment) (*LFIO* 1999, p. iii). The Army now accepts the operating concept of generating combat power that has aspects of the previous IO combat function distributed among the latest five operational functions (Command, Sense, Act, Shield and Sustain). In this regard, combat power is no longer seen generally in terms of a fix and strike model, but is viewed more as an integrated, coordinated and unified effort to produce decisive effects on the physical and moral planes (*FEC* 2004, p. 15). Additionally, new and relevant capabilities have been generated and employed since the publication of *Land Force Information Operations* in 1999. Thus, some of the fundamental premises of this publication deserve re-evaluation.

There are substantial gaps in the publication of doctrine, particularly at the tactical level, with respect to certain components of IO, mainly PYSOPS, CIMIC and PA

Background

IO are conducted in order to generate specific non-lethal effects in the battlespace. These effects facilitate and reinforce other effects generated through tactical operations. IO are enabled through the synchronised employment of various capabilities including, but not necessarily restricted to, civil-military cooperation (CIMIC), psychological operations (PSYOPS), public affairs (PA), operations security (OPSEC), communication and information systems (CIS), and intelligence, surveillance, target acquisition and reconnaissance (ISTAR). The principle objective of IO is to enhance and enable combat power through the protection and exploitation of the commander's information environment.

Discussion

This discussion will focus on the production of an appropriate structure for presenting Army IO doctrine. There are substantial gaps in the publication of doctrine, particularly at the tactical level, with respect to certain components of IO, mainly PYSOPS, CIMIC and PA. This paper will propose that the current keystone Army publication, *Land Force Information Operations*, be revised to describe IO in general at the operational level; that tactical level doctrine on IO be incorporated into *The Medium-Weight Battle Group in Operations* and *Brigade Group Operations*, and that there be an increase to the series of supporting tactical manuals on the various individual components of IO. This paper primarily seeks input on the scope and nature of revising *Land Force Information Operations* and the production of supporting tactical doctrine.

Presentation and Structure of Information Operations Doctrine

The content of *Land Force Information Operations* is intended to describe doctrine and concepts applicable to operational and tactical levels of command across the full spectrum of conflict (*LFIO* 1999, p. iv). Its stated purpose is to describe the concept of the IO combat function in detail, and outline how it relates to the other combat functions and contributes to the success of commanders on the battlefield (*LFIO* 1999, p. iii). These it does, consisting of definitions, descriptions and discussion with respect to a broad range of relevant areas, even though it is dated in dealing with combat functions rather than the operational functions.

However, doctrine is understood as the "formal expression of military knowledge and thought that the army accepts as being relevant at a given time, which covers the nature of conflict, the preparation of the army for conflict, and the method of engaging in conflict to achieve success" (*CLO* 1998, p. iv), and there are gaps in the overall presentation of IO doctrine. So, a fuller presentation somewhere is in order. I am proceeding on the assumption that there is a continuing requirement for a manual, or series of manuals, to describe current and emerging Army tactical and operational level doctrine, tactics, techniques and procedures for all relevant components of IO.

B-GG-005-004/AF-010 *Canadian Forces Information Operations* describes strategic and joint operational level doctrine. It distinguishes between offensive IO (Off IO) and defensive IO (Def IO) as the major components of IO. It also lists PA and civil affairs as other integral components of IO (CFIO 1998, pp. 1-13). On the other hand, *Land Force Information Operations* categorizes Off IO and Def IO as the two action components of IO, and CIS, relevant information, CIMIC and PA as support components (*LFIO* 1998, p. 16). There is an appropriate amount of congruence between these two publications, but neither provides the range of detail required to support the establishment of such things as battle task standards (BTS), training standards (TS) or standing operating procedures (SOP), nor is this information found elsewhere, in a complete and organised fashion, in published Canadian Army doctrine. There is a place here, in *Land Force Information Operations*, for an updating and fleshing-out of the Army operational level information operations concepts and doctrine.

The present organization of *Land Force Information Operations* continues to be generally suitable for presenting operational level doctrine. It begins with a description of "Information Operations and the Operating Environment" (Chapter 1) and the "Fundamentals, Components and Activities" (Chapter 2) of IO. The publication then goes on to describe two of the support components, "Communication and Information Systems" (Chapter 3) and "Relevant Information" (Chapter 4), with a separate chapter on "Intelligence, Surveillance, Target Acquisition and Reconnaissance in Land Operations" (Chapter 5). As Chapter 4 also deals entirely with ISTAR, it should be combined with Chapter 5 and renamed to make this clear. The two action components are dealt with next in the single chapter, "Offensive and Defensive Information Operations" (Chapter 6). These are likely to be better served by having separate chapters. The manual is completed with descriptions of the final two support components, "Public Affairs" (Chapter 7) and "Civil-Military Cooperation" (Chapter 8). With the changes noted, this framework is a good basis for revision to the manual.

The Force Employment Concept for the Army indicates that the achievement of tactical decisiveness "will be accomplished by achieving a full range of effects," including information operations (*FEC* 2004, pp. 39-40). While there has been no great change

in the fundamental validity of the concepts underpinning Land Force IO, there is an increasing understanding that integration of the capabilities described by the individual operational functions needs to be pursued. Land Force Reserve Restructure (LFRR) has also recently brought into being standing capabilities in the areas of CIMIC and PYSOPS. It is with these indicators in mind that I am convinced there is an increasing requirement to formalize a cogent structure and presentation of the doctrine as indicated in the introduction above. *The Medium-Weight Battle Group in Operations* and *Brigade Group Operations* are, in my view, the natural venues for the presentation of tactical level information operations doctrine, as it is within this level of commitment, usually in a combined and joint context, that Canadian land forces are most likely to be employed.

Additionally, there is an ongoing project to draft a *Tactical Civil-Military Cooperation* manual in response to a perceived pressing need. While there is excellent and broad joint operational doctrine in the form of B-GG-005-004/AF-23 *Civil-Military Cooperation in Peace, Emergencies, Crisis and War*, it does not deal in detail with tactics, techniques and procedures for training or employing the capability on the ground. The content of *Land Force Information Operations* consists mostly of a conceptual discussion, but lacks detail in its discussion of the individual components of IO, particularly at the tactical level. Therefore, at least in the instance of CIMIC, there is a clear requirement for a supporting tactical manual for this specific component, and it is suggested that there are other components with the same requirement (e.g. PSYOPS and PA).

LFRR has also recently brought into being standing capabilities in areas such as CMIC and PYSOPS

Recommendations

It is recommended that the present *Land Force Information Operations* be revised in its scope to focus on operational level IO concepts and doctrine, and that it be brought up to date.

Moreover, it is recommended that general tactical level IO doctrine be incorporated into *The Medium-Weight Battle Group in Operations* and *Brigade Group Operations*.

Lastly, it is recommended that a series of supporting manuals, describing tactical level doctrine in sufficient detail to enable training and employment at the tactical level, be produced for the various components of IO. Immediate and pressing gaps that present themselves are *Tactical Civil-Military Cooperation* and *Tactical Psychological Operations*.

Conclusion

The proliferation of information and technology within the battlespace creates increasing and continually changing demands on all soldiers, but particularly leaders. Consequently, there is a need to be sure that the conceptual framework and the evolving and detailed doctrine, tactics, techniques and procedures will be robust enough to support present and future training and operations. To assist, I invite your input with regard to the content, structure and presentation of Land Force IO operational and tactical level doctrine. Respond with comments to Major R. W. Bell, DAD 6-4 (Information Operations) at Bell.RW@forces.gc.ca.

A LIGHT FORCE CAPABILITY FOR THE ARMY

Lieutenant-Colonel Dave Galea

> *The Army needs to ensure that it is able to generate light infantry battalion groups that have adequate firepower, mobility and protection without making them too heavy to meet the demands of their likely special operational environments.*[1]
>
> (MGen Caron, A/CLS, Sep 04)

No longer is the Canadian Army satisfied with Light Infantry Battalions (LIB) that are "equipment deficient" versions of their mechanized counterparts as was accepted from the time that the LIBs were first established in Canada in the early 1990s. The need for light forces that can be rapidly deployed and are optimized for complex environments[2] has been clearly articulated in the Future Security Environment (FSE) and demonstrated by the various deployments of our own and the light forces of our allies over the past decade. There is therefore a need to create a lightweight, combat capable force focused on modernization, interoperability, and deployability. Failure to do so could lead to a situation where the Army could find itself strategically irrelevant when faced with certain situations due to a lack of appropriate capabilities / force structure.

This article will provide an update on recent developments related to the creation of a true Light Force capability within the Army and provide the reader with a forecast of the work that lies ahead. This Light Force capability will be developed following the Army's Capability Development Process[3] and documented within a Capability Deficiency Record (CDR).[4] The Directorate of Land Strategic Concepts (DLSC) with the assistance of the Light Forces Working Group (LFWG) has recently completed Pillar 1—Conceive of the CDR process and has passed the lead to the Directorate of Army Doctrine (DAD) for completion of the subsequent Pillars 2 and 3—Design and Build respectively.

Background

As a result of the global strategic realignment in response to recent world events, including 9/11 and contemporary operational experience, LFC has conducted a fundamental review of the need for light forces, including light infantry. In Operation APOLLO and Operation ATHENA, light forces as part of combined arms task forces proved invaluable, especially in rugged terrain and complex environments where LAV-based forces would not have been able to manoeuvre effectively. In view of these experiences, and as part of the ongoing Army Transformation initiative, it is critically important to ensure that light forces capabilities continue to evolve in order to exploit unique operational environments.

Based upon an appreciation of the operating environment, and in concert with the ongoing Light Force Enhancement (equipment) Project[5], the Infantry Corps stood-up a Light Infantry Working Group to examine how to bridge corps-specific capability shortfalls. On 8 Jul 04, to ensure that such work was captured within the emerging governance model, and as a result of strategic realignment caused by the events of 9/11

and subsequent operational experience, the A/CLS provided written guidance to develop Army light forces "to create, maintain and sustain a group of strategically relevant and tactically decisive capabilities that can be rapidly integrated with other land and joint capabilities to build effective task-tailored forces."[6] DGLCD was tasked to initiate the capability development process and to take responsibility for the LFWG.

Recent operations and the anticipated operating environment applicable to the Army of Today and the Armies of the future require that the Army be able to field light forces that can be integrated with other land and JIMP[7] capabilities in order to be able to build, deploy and employ effective task-tailored forces to defend Canadian interests at home and abroad. The governments recent International Policy Statement[8] confirmed this requirement directing that the Army provide light forces to support the Special Operations Group, the Standing Contingency Task Force and Mission-Specific Task Forces. As with other forces, light forces will also be required to support domestic operations. As a key element of these light capabilities, light infantry will provide a critical manoeuvre capability optimized for operations in complex terrain. In order to be effective on the modern battlefield, light infantry will require command support, combat support and combat service support systems that are able to operate in the same environment and provide complementary capabilities.

Recent operations and the anticipated operating environment applicable to the Army of Today and the Armies of the future require that the Army be able to field light forces...

It should be recognized from the outset that this has not been an unconstrained process. In his planning guidance to the LFWG the A/CLS provided the left and right of arcs for the development of this emerging capability. This guidance is summarized in the following six tenants:

♦ The LIB is not a force employment structure - it is a force generation structure like other LFC units… light infantry battalions will develop special expertise in the command and control of light forces in order to lead missions in those complex terrain environments where LAV-based forces cannot manoeuvre.

♦ LIBs will force generate light companies, as well as command support, combat support (recce) and combat service support elements optimized for operations in complex terrain.

♦ Light infantry will be equipped and trained to operate principally on foot but will also maintain skills to utilize a variety if transport means, including trucks, light vehicles (especially LUVW), and helicopters.

♦ Light forces will not generate an airborne (i.e., parachute assault) capability... parachute delivery skills will be maintained to the extent required by CF tasks assigned to LFC... parachute companies will be retained in light infantry battalion structures, and the Canadian Parachute centre will continue to support parachute capability tasks in accordance with the operational planning process and SORD.

♦ Complementary light capabilities will be developed in all branches (in particular signals, artillery, engineers, and CSS) in order to contribute to light task forces and to

support light infantry in a variety of complex environments.

♦ Above all, light infantry will not develop specialist skill sets to such a degree as to limit their ability to participate in conventional combat and non-combat operations.

The Evolving Operational Environment

The design of a light force must be influenced by assessments of current and evolving operational environments and most likely missions. The Force Employment Concept (FEC)[9] for the Interim Army indicates, Conflict scenarios are expected to vary in severity and intensity, with the level of violence likely to remain toward the lower end of the scale. However, the probability of large-scale conventional conflict, while low, remains. Conflict will become increasingly complex due to the asymmetric nature of the threat, the use of complex terrain and the expansion of areas of operation. … Urban terrain will increasingly become the setting for conflict. Operations will often be characterized by what has become known as the "three-block war,"[10] where forces can expect to be providing humanitarian assistance in one part of a city, conducting peace support operations in another and fighting a lethal battle in yet a third. Moreover, the requirement to transition from one type of activity to the next could be measured in minutes. In sum, the traditional, attritional approach to warfare that focused on physical mass and firepower against a predictable, symmetrical enemy on an open, linear battlefield seems highly improbable. In its stead, war fighting is evolving to emphasize network-enabled and effects-based operations. These operations will be achieved through precision engagement, manoeuvre and an increasing emphasis on operations in complex terrain and environments, particularly urban operations.

The dynamics of warfare in the current and projected operational environment have changed

The dynamics of warfare in the current and projected operational environment have changed. Our adversaries will be organized with a mix of conventional and unconventional forces, both state and non-state sponsored. They will seek asymmetric advantage in urban complexes, and they will deny manoeuvre through constricting terrain. Because the enemy knows that modern armed forces can have the most devastating effects against them in the more "open" terrain, the enemy will tend to operate in mixed terrain. They will make the best possible use of concealing and covering terrain to avoid exposure to air attack and to overmatching long range direct and indirect fires. Thus tactical formations will need to be optimized for operations in "complex" rather than open terrain. Irregular forces, armed with short range anti-tank weapons, mines and improvised explosive devices will comprise a significant portion of the enemy force in this environment, especially in the wake of conventional combat operations and will likely increase as regular forces are defeated In general, such adversaries are organized in a networked vice hierarchical fashion and seek advantage through knowledge of local terrain, culture, society and individuals. They can be expected to initiate tactical engagements at their advantage from covered and concealed positions to inflict maximum delay, casualties and destruction before breaking off the engagement to reposition along rehearsed, covered and concealed routes to the next position.

While the last century featured colossal urban battles like those in Stalingrad, Aachen, Berlin and Hue, combatants tended to avoid them if they could. Combat in large cities tends to consume huge numbers of forces, divert resources from other campaign objectives, and distort the over-all pattern of the campaign, thereby furnishing the enemy an opportunity to regroup and reconstitute. But in this century the likelihood of Canadian forces fighting in this environment will grow. This is partly because adversaries will seek asymmetric advantages, partly because rapid urban growth world-wide will make it difficult to avoid, and because of the strategic and operational value of populations and urban centres. Cities are vital national resources, and their prompt liberation or seizure easily can become a political imperative. Finally, non-state actors, adversary states or failed states may not choose or be able to intervene or oppose foreign intervention with conventional forces and capabilities, but may pursue their strategic aims unconventionally by attacking friendly centres or making it as difficult as possible for Canada and its allies to achieve tactical control of major urban centers.

The greatest quality of light forces is their responsiveness

Within this forecasted operational environment the optimal employment situation for a light force is comprised of offensive, defensive, transitional and stability missions in complex environments and complex terrain (urban, mountain, jungle, Arctic and forest) against conventional, unconventional or a mix of forces. Operations in these environments will become increasingly important in this century.

The Requirement

In order to define the requirement the LFWG first needed to define "light force" and then to prioritize the most likely tasks expected to be performed within the current strategic environment. To this end *light forces* are defined as:

> *A force optimized for military operations in complex environments, rapidly deployable through a variety of means, yet not tied to any one platform. Note: They are inherently rapidly deployable by air, sea, land, pre-positioning, or a combination of all. They are scaleable with all five operating functions resident with compatible mobility and protection, albeit with an increased reliance on reachback (e.g., fires, CSS) capabilities.*[11]

The greatest quality of light forces is their responsiveness. Optimized for complex terrain, light forces must be provided with a range of capabilities, mobility, weapons and firepower commensurate with the threat environment in which they are deployed. They must be strategically deployable by air, sea and land and tactically mobile within an operational theatre, by tactical air (i.e. CC-130 size ac), by aviation assets, by integral, albeit limited wheeled assets, and /or dismounted. Some light forces should be capable of conducting parachute operations at sub-unit level (e.g. company group). Light forces must be organized, equipped, and provided the training resources to be employed as a company or battalion level light Task Force, while at the same time being able to work within, or with elements of the medium weight LAV Task Forces. This ability to task-tailor forces, to deploy light Task forces or light and LAV inter-mixed Task Forces, will enhance the Army's combat capability.

In addition to being capable of conventional operations, light forces must also be capable of supporting Special Operating Forces (SOF) in their operations. In his

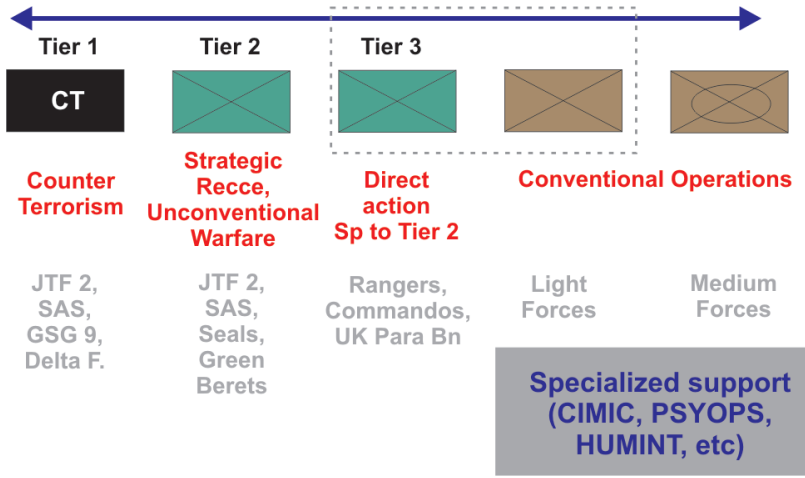

Figure 1: Continumn of Forces

planning guidance the A/CLS directed that "light infantry will not develop specialist skill sets to such a degree as to limit their ability to participate in conventional combat and non-combat operations." Subsequent clarification of this aspect of the requirement was provided indicating that in addition to the full range of conventional operations, light infantry was to be capable of supporting SOF operations such as those conducted by JTF-2, but in doing so they were not to become SOF themselves. The area within the dashed box at Figure 1—Continuum of Forces depicts the area within which Light Forces will be expected to operate with overlapping responsibility to perform Tier 3 SOF and conventional operations.

Light Forces Characteristics

Light forces possess the following characteristics:

♦ Light forces are more rapidly deployable than medium or heavy forces. A light force capability can reduce the complexity of deployment planning, thereby enhancing responsiveness and flexibility to planners. However, they must be robust enough to fight with or without external support for limited periods of before they require sustainment. When necessary they can be ready to fight immediately on arrival to a Point of Entry; i.e. "off the ramp", when tactically loaded.

♦ Light forces are versatile. Optimized for operations in complex terrain and complex environments, and appropriately resourced and trained light forces are capable of all defence missions against conventional and unconventional forces.

♦ Light forces contribute to the Joint Team. Organized into task forces (light and/or mixed light-medium) they can assist commanders in task-tailoring forces to meet the threat and operational environment that is anticipated. They are more effective than medium / heavy forces in complex terrain and environments. In these situations they are particularly effective against asymmetric forces.

♦ Through their interaction with local populations, whilst conducting operations in urban terrain, light forces contribute to the joint team by sharing "high definition"

ground situational awareness, providing exact targeting data for high value targets aiding in their precision engagement and helping to prevent unacceptable collateral damage.

♦ Due to their rapid deployability light forces could be used both as an "early in—early out" force in any environment.

♦ Light forces offer significant flexibility of response options in areas such as search and rescue, disaster relief, international humanitarian assistance, evacuation of Canadians overseas (NEO), and Peace Support Operations (Chapter 6 or 7 of the United Nations' Charter).

♦ Light forces offer the ability to provide higher levels of support to special operations forces through their flexibility and training.

♦ Integral to the light forces is the flexibility to generate a parachute capability at sub-unit level.

One of the more difficult questions faced by the LFWG was what makes light infantry different than other types of infantry. It was determined that light infantry differs from other types of infantry due to their responsiveness / readiness, mind set, versatility, training and lightened equipment.[12] Properly resourced and trained light forces are capable of great responsiveness. They can be rapidly deployed to an operational theatre as a first in type force, fighting on arrival if necessary. In this context they could be used to buy time for the deployment for medium weight forces. One must, however, recognize that the ability of a light force to achieve high readiness is entirely dependent on the resource levels allocated. Light Forces, by virtue of their training, their physical fitness, and their attitude of self-reliance have greater camaraderie and confidence that enables them to endure hardship and prevail. By their nature they possess great versatility and propensity to improvise. They are capable of conducting a wide variety of military operations, particularly in complex terrain and environments. Their training in differing skill sets to other types of infantry make them more suitable to support SOF in their operations. Finally, light forces possess equipment that is light and man portable and when the latter is not possible it is carried on light vehicles/ATVs.

When comparing light and medium forces envisaged for the Canadian Army the LFWG determined that there is a difference between light and LAV infantry. The FEC of the Army of Today dated 31 Mar 04 indicates that light forces will not be expected to re-role to medium for an operation as has sometimes been the case in the past. Similarly, it was determined that the re-rolling of LAV based infantry to light would be equally inappropriate as this type of Infantry without their LAVs does not equal light infantry as some would have you think. LAV infantry without their APCs become at best dismounted infantry or motorized infantry if they are provided wheeled transport. Light Infantry remains a different capability due to their mindset, greater specialization, different skill sets and light equipment. Notwithstanding, the Army, at least in the short term, has adopted a philosophy that a LAV infantry company minus their APCs will equal a light infantry company for force employment in order to make the managed readiness program work.[13]

Light Forces Concept

Light Forces are a useful and essential capability Light Forces are a useful and essential

capability. They possess great utility and flexibility for employment in all current and foreseeable defence missions and tasks, alone or in conjunction with medium weight forces. They will be optimized for operations in complex terrain (e.g. urban) and complex environments (e.g. arctic, mountains, jungle). Light forces are more suitable to conduct unique operations than medium forces (e.g. airborne/parachute, airmobile, amphibious). With this in mind the LFWG developed the following concept for light forces:

> Light Forces will be developed that are scalable from company to battalion size task forces tailored to conduct full spectrum of operations in complex terrain and environments. They will be resourced, equipped and trained to conduct and win in Blocks 1,2 and 3 when executing the full range of conventional missions/tasks and to support to SOF in their operations. They will be employable alone or in conjunction with medium forces forming light coy and bn sized Task Forces (TF) to conduct operations. These light TF will be based on light infantry and will have all five operating functions resident within commiserate to the operating environment / threat anticipated. (approved by ACDB 3 Mar 05)

Light Forces are a useful and essential capability

Within this construct the Army light force capability will be developed to be:

- Principally foot borne, capable of operating on light scales and when necessary conduct isolated operations for up to 72 hrs before requiring sustainment and/or reinforcement.
- Optimized for operations in complex environments and terrain.
- Trained for conventional missions, but capable of supporting SOF.
- Capable of high readiness and of rapid strategic deployment by air, sea or land.
- Rapidly deployable within a theatre of ops through a variety of means, including tactical air (airland and para), avn, wheeled tpt, ATVs, and/or dismounted movement.
- More reliant than medium forces on reachback (e.g., for fires, CSS, technical advice, etc.)
- Dependant on physical fitness and endurance.

Current Capability

The Army is not without a light capability today. Our light soldiers are world class. The LIBs, albeit with limited resources and capabilities exist today. Other elements required to round out a light task force (Arty, Engrs, Sigs, etc.) have also developed some capacity to support light forces notwithstanding the absence of official Army level direction. Limited mobility assets (aviation, tactical air, BV 206 ATVs, etc.) are also currently available. Finally, innovative CSS solutions have been developed when necessary to support specific light deployments. It could be said that the 75% solution exists today. One need only look to the outstanding work performed by the 3 PPCLI Battle Group in OP APOLLO, Afghanistan and the 3 RCR Battle Group's contribution to ISAF in OP ATHENA, Afghanistan as demonstrations of this existing capability.

Capability Gap

However, there does exist a capability gap between our present capability and where we need to be! The LIBs as they currently exist lack equipment, resources and manpower. Canadian light doctrine/TTPs need to be developed. The supporting combat arms, combat support arms, command support and service support do not presently possess a mandate to provide light forces and, like the LIBs, possess only a limited light capability today. Figure 2 depicts areas of concern in relation to the operational functions that were identified in the Pillar 1—Conceive staffing of the CDR. Likewise, no analysis has yet taken place to determine how much of this capability is required within the Army. For example, is the current mix of light/medium forces (ratio of 3:6) appropriate to the future operating environment? If not, what should the mix be?

These concerns and issues will be dealt with by the subsequent Pillars of the CDR process (Pillar 2—Design, 3—Build and 4—Manage) where they will be flushed out, quantified and solutions developed. What can be said at this point is that these challenges are not insurmountable and many can be easily dealt with providing an ideal opportunity for spiral development.

The Way Ahead

In keeping with the theme of spiral development the land force will not have to wait for an omnibus capital project to deliver this essential capability a decade or more from now. It is the intent of the Army to refine the light force capability incrementally in relation to the Capability Release (CR) Packages being used to regulate the Army managed readiness program. Each of these CR packages will look at personnel, equipment, training, doctrine/TTPs and C2IS issues specific to each release. DAD

COMMAND	SENSE	ACT	SHIELD	SUSTAIN
Doctrine and TTPs—Collective Training				
Force Employment Concept Command Support Elements LFC2IS Digitization Reachback Mobility of HQ Elements	ISTAR Integral Recce & Surveillance Mobility / Manportable Recce & Surv Systems Precision Para / O_2 Sys	LIB pers strengths Integral Direct Fire Precision Indirect Fires Snipers/marksman Aviation Tactical Air Mobility—Lt Ptl Vehs / ATVs DF Anti-structure capability	Light Cbt Sp Arms Man portable GBAD Access to AD Wng Sys Combat Identification / IFF	Light CSS Training of CSS Personnel Lt Sp Concepts (CSS, Med, etc.) Soldiers load Precision Aerial Delivery/ Re-supply Portable power

Figure 2: Light Force Areas of Concern

currently plans to present CR1 light structures for the approval of the Army Combat Development Board (ACDB) Jun 05. It should be no surprise that the current LIBs will be used as the basis for future development. Personnel shortages within LIBs and

other supporting elements will be addressed through existing plans for the Land Force Expansion related to the government's direction to increase the size of the regular force by 5,000. For deployments that occur in the CR1 timeframe (Jan 05 to Aug 06) Task Forces (light or mixed) will be formed using the 144-person light force company structure depicted in Figure 3. Future light structures will be developed for subsequent releases (CR2—Sep 06—Aug 08 and CR3—from Sep 08) following a program of experimentation to determine the optimum structure / weapons / equipment mix. It should also be noted that many of the other capabilities that will be required to support future light forces are also the subject of the CDR process. For example, there is a CDR for tactical aviation (CDR 4002) that aims to improve aviation support to the Army. While it is not light force specific it will field a range of capabilities that would be required to support light forces in operations.

> The land force will not have to wait for an omnibus capital project to be developed to deliver this essential capability a decade or more from now

DAD is presently working to develop doctrine and TTPs applicable to light forces. Like structures, doctrine will be produced and delivered in conjunction with each capability release. Due to time constraints CR 1 will be expected to utilize existing doctrine. For subsequent capability releases DAD will produce Light Force doctrine to correspond to each Capability Release gateway, commencing in Jun 06 for CR 2. Having developed the doctrine, then training will be adapted to ensure light forces are ready and able to perform their missions. The next milestone for light force development is for the DAD staff to brief Army Council in May 05 as to implications and issues with regards to light forces.

Light Force equipment requirements will be provided for in three ways. First, the

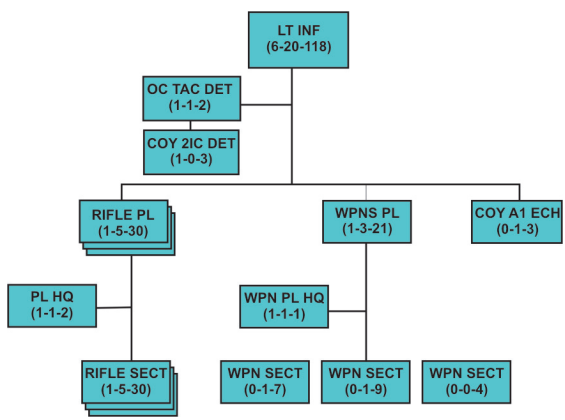

Figure 3: LT INF COY Structure CR1

ongoing soldier modernization program will continue in the areas of load carriage, radios, personal weapons and individual equipment. The ongoing weapons programs of ALAWS and CASW will also deliver systems to light units. Second, light force

requirements will be factored into future land force equipment projects such as CCNLS, ISSP and Sniper System. The SARP II Small Arms Replacement Project will address many of the small arms requirements for light forces, as well as those for medium forces. Capabilities that may be included, are light, short-range indirect and direct fire systems and as well as non-lethal systems. Other planned projects are the 84 mm Re-role, the Shelter and Survivability System and the Light Recce Vehicle. Lastly, the Light Forces Enhancement Project will cater to light force equipment not addressed by many other projects. This project is currently funded in the SCIP at $105M and due to field equipment in the 2012-20 timeframe.

Conclusion

Recent world events and operations have highlighted the utility and the requirement for light forces. Future trends indicating an asymmetric threat, a worldwide trend towards urbanization, and a likelihood of having to fight conventional and/or non-conventional forces in complex terrain and complex environments taken together dictate that light forces will continue to be required well into the future. The recent Defence Policy statement confirms this, directing that the Army provide light forces to support the Special Operations Group the Standing Contingency Task Force and Mission-Specific Task Forces. With the approval of Pillar 1—Conceive the concept for future light forces has been set and the lead has been passed from DLSC to DAD who will continue to refine the light forces capability. DAD, using the Armies Capability Development Process, is forging ahead and have Pillars 2 and 3 well in hand. The light force capability, using the LIBs as the starting point, will be spirally developed and the capability refined incrementally in relation to the Capability Release (CR) Packages being used to regulate the Army managed readiness program.

From a light force perspective the first and most critical step has occurred—no longer are they considered the poor cousins of mechanized forces—there is now official recognition that light forces are a critical operational requirement for the CF in their own right. With this recognition it will now be possible for the Army to build and equip relevant, combat effective light forces. Given the anticipated future operating environment it is safe to say that light forces are here to stay

About the Author...

LCol Dave Galea was born and raised in Toronto, ON. He joined the CF as an Infantry Officer in 1975, and upon completion of training was commissioned into the Royal Canadian Regiment in 1976. He has served in a variety of regimental appointments in the First and Third Battalions, serving as a mechanized Company Commander with 3 RCR in Germany. He also He also served on RSS with the Lincoln and Welland Regiment, commanded the Recruit Company of the RCR Battle School, served as the DCO of 3rd Airborne Commando, Canadian Airborne Regiment and as the DCO of the Canadian Parachute Centre. Previous staff appointments include G3 Ops, SSF, SO2 Eqpt Coord at FMCHQ, and G3 CFNA,. As an exchange officer, he instructed tactics at the Australian Land Warfare Centre and has completed UN tours with UNDOF and UNTSO, most recently as an Observer Team Leader for one year in Southern Lebanon. LCol Galea has a BA in Economics, and is a graduate of the CLFCSC and CFCSC. He was promoted to his present rank in 2004 and is presently employed as DLSC 3—ACT.

Endnotes

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TOWARD A NET-ENABLED LAND FORCE: PROBLEMS AND PROSPECTS

Mr. Peter Gizewski

Recent applications of computer and information technology (IT) to military affairs are generating considerable interest throughout the Canadian Forces (CF). New thinking in the area of networking is especially noteworthy. Referred to as Net-Enabled Operations (NEOps) such innovations involve the integration of information systems and weapons platforms in ways that promise substantial gains in the effectiveness of military forces.[1] Properly implemented, a "networked" force could offer marked improvements in information gathering and sharing, a greater level of situational awareness and collaboration, faster decision-making and, ultimately, increased mission effectiveness.

Accordingly, efforts to investigate and in some cases, apply such thinking within the defence establishment are underway. Recent indications of CF interest have included a Department of National Defence (DND) sponsored symposium investigating the potential of NEOps for defence and security, the inclusion of NEOps as a key part of the CF Integrated Operating Concept (IOC), and ongoing development of a CF/DND "Keystone" document elaborating a general CF orientation toward NEOps in the years ahead.

Whether movement toward NEOps will in fact yield the benefits claimed, remains an open question. Not only must definitive results await fuller implementation and use, but implementation itself poses a range of technological, social and cultural challenges. In fact, a clear roadmap for movement toward a more network-enabled force does not yet exist.

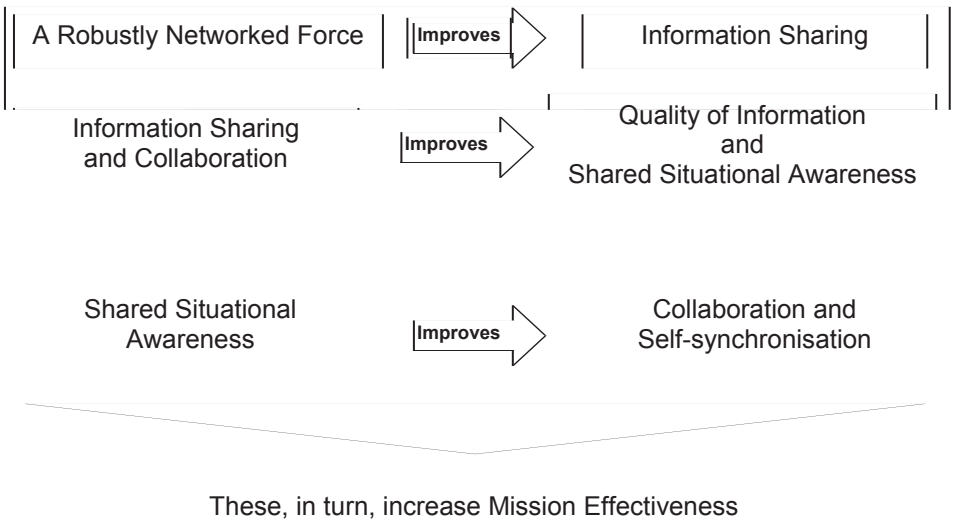
Questions about the applicability and impact of NEOps are especially acute in Canada's Army. While hailed by some as a key component of land force/Army transformation, questions still surround the degree to which a more technologically networked force is not only feasible—but ultimately—desirable. Indeed, some even warn that an overzealous movement toward such a vision carries a range of dangers that may well result in a net decline in overall capabilities and effectiveness.

Critical examinations of both NEOps and the character of the Canadian Army (CA) suggest that movement toward a more technologically networked force does indeed entail considerable challenge as well as some degree of risk. Nevertheless, careful investigation and application of networked principles and technologies is possible and warranted. While effective networking has long been an important aspect of Canadian Army operations, new developments promise to extend the benefits of networking still further. Crucial however, is ensuring that pursuit and application of new networking technologies proceed cautiously, and is informed by a realistic appreciation of army missions and requirements.

Gizewski, Mr. Peter, 'Toward a Net-enabled Land Force: Problems and Prospects'
Canadian Army Journal Vol. 8.2 (Summer 2005), 20-35.

NEOps Definition and Attributes

According to its proponents, NEOps represents an effective military response to the challenges and the opportunities created by the information age. At its crux lies the idea of networking, and the military advantages that the effective integration of information systems (both technological and human) can produce through the creation and exploitation of information. By linking knowledgeable entities in a battle space, forces will be more capable of gaining information superiority and ultimately, greater military effectiveness.[2]



Network-Enabled Processes

Source: Department of National Defence, DND/CF: Network Enabled Operations: Keystone Document: Final Draft, (Ottawa: Department of National Defence; 30 May, 2005), p. 8.

The concept relies heavily on an appropriate integration of both technological and human capital. On the one hand, it presumes acquisition of a myriad of computer networking and information-sharing technologies and capabilities to facilitate effective storage as well as fast processing and distribution of key information. On the other, it requires possession of a range of human cognitive and behavioural skills as well as organizational procedures and arrangements capable of ensuring that the information gained through the exploitation of enhanced technologies can be effectively harnessed to support key policy aims and objectives.[3]

Such networking would create the ability to achieve shared and "near real-time" situational awareness (SA). Accordingly, effects in the battle space would be better synchronized; speed of command would be increased; (and) the lethality, survivability and responsiveness of forces would improve immeasurably.[4] The result would be a capacity to conduct a more precise, agile style of maneuver warfare in which armed forces could conceivably engage in near-continuous action. Not only would the capacity to more effectively and efficiently destroy enemy forces and infrastructure increase but ultimately the result would be the ability to engage in actions capable of breaking an adversary's will while leaving the majority of his forces intact.[5]

In fact, by offering a more efficient means for forces to effect the behaviour of intended targets, NEOps would provide an important "enabler" for conducting Effects Based Operations (EBOs) i.e. coordinated sets of actions aimed at shaping the behaviour of intended targets (e.g. friends, allies, neutrals and foes in peace, crisis and war).[6] Simply put, NEOps would constitute an important means through which EBOs could be achieved. Some even contend that it would result in a force capable of accomplishing missions with far fewer platforms and personnel than would be required in the case of a comparable, non-networked equivalent.

Practical Application

Recent application of NEOps-related technologies and concepts has in fact yielded promising results. For instance, experiments within the US Defense Advanced Research Projects Agency's (DARPA) "Command Post of the Future" program have demonstrated that better visualization tools increase situational awareness, that collaboration and shared visualizations increase understanding and that increased SA and understanding increased the likelihood of mission accomplishment.[7]

The concept relies heavily on an appropriate integration of both technological and human capital

The results of Millennium Challenge and the Multinational Experiment 3 at Joint Forces Command (JFCOM) have found improvements in the speed of command and the capability to synchronize force elements when they shared information, provided collaboration tools and reorganized their headquarters to take advantage of new information technologies.[8] And data taken from the Headquarters Effectiveness Assessment Tool (HEAT) from NATO Battle Force Training Exercises and US Army war-fighter exercises consistently show that high-quality situation awareness is the single strongest predictor, among C2 factors, of mission accomplishment.[9]

The results of other experiments are equally compelling. US Air Force training has demonstrated that pilots sharing digital images (Link 16) have a 2.5 to 1 advantage in air to air combat over those in the same types of aircraft relying on voice-to-voice communication—even when reinforced by AWACs support. And, studies involving the US Stryker Brigade, which is equipped with increased reconnaissance, HUMINT collection and intelligence processing capability as well as a rich set of networks, demonstrate that NEOps significantly outperforms a non-networked light infantry brigade counterpart on offensive operations.[10]

Positive results have also been reported from preliminary use of networking principles and technologies in a peacekeeping context. Introduction of new networking technologies in NATO Peacekeeping Operation AMBER FOX in Macedonia is exemplary. This involved the use of an wide-area network linking Dutch headquarters with those of German, Italian and French forces—with information distributed via satellite communication, and field liaison teams and patrols acting as sensors. Overall, while the application of networking systems required both a change in command style and time to master, it reportedly simplified and improved headquarters operations significantly.[11]

Yet perhaps most compelling are indications of the utility of NEOps in actual combat operations. Already, Operation Iraqi Freedom has been dubbed "a significant step forward in both identifying and appreciating what network-centric forces can do…" Not only did the information sharing offered by networking technologies help to keep the Pentagon informed of every move coalition forces were making during the war, but it allowed a more effective integration of joint operations. According to Brigadier General Dennis Moran (then CENTCOM J6) "…such technology allowed the rapid sharing of information at all levels of command as well as rapid movement of intelligence to both analytical decision-makers and shooters."[12] Meanwhile, another officer noted that newly networked systems enabled soldiers to operate at night, during sandstorms, and in ways that had not been previously experienced. And, "…major headquarters, even those out of theatre, were able to follow the battles and advance to Baghdad much more accurately than in previous ground combat."[13]

Yet perhaps most compelling are indications of the utility of NEOps in actual combat operations

Beyond this, NEOps-related concepts and technologies are identified as vital to the defeat of Taliban and Al Qaeda forces in Afghanistan. For instance, the ability to pass information gathered by Predator and Global Hawk unmanned aerial vehicles (UAVs) to ground commanders enabled near-real-time battlefield SA. This greatly facilitated more rapid identification and destruction of time sensitive targets. And the networking of United States Central Command (USCENTCOM) headquarters in Tampa with a forward and a subordinate headquarters (respectively located in Kuwait and Uzbekistan) produced decision-making possibilities that were previously unattainable.[14]

NEOps and Canada's Army

Not surprisingly, interest in and incentives for creating a network-enabled CF is high. With both national and international security threats and challenges becoming more complex and multidimensional, NEOps appears to offer a means of ensuring a truly integrated, interdisciplinary response. Properly applied, such a capability would ensure a solid capacity to bring to bear all relevant elements of national power and influence on a particular problem (i.e. mobilizing many "problem solvers") and responses that would be both more efficient and cost-effective.

To the extent that NEOps would ultimately allow some substitution of technology for person-power moreover, it could increase the ability of the CF to cope with the prospect of modest future defence budgets, as well as the potential decline in raw numbers of recruits which could occur in light of current demographic trends. At the very least, application of NEOps could better ensure optimal utilization of existing personnel.

Recognition of the potential utility of NEOps is equally apparent within the Army. Not only does the CA's Force Employment Concept identify the changing nature of gathering, processing and using information as "…perhaps the single most important advance to affect military operations in the near future."[15] NEOps is viewed by many as a key means of facilitating land force transformation. Indeed, the enhanced

Conflict Phases	Intervention (War-Fighting) Basic Data on Blue and Red Forces, location and disposition, Military and Civilian, etc.)	Stabilization (Peace Enforcement)	Transformation (Peace-Building)
Information Types (Volume, character, etc.)		Data on Blue and Red Forces, indigenous population (friendly and hostile, civilian and military), Finer grained information on AO.	Awareness of all elements involved in peace-building campaign, status of population and authorities. All relevant information concerning society and government.
Decision Complexity/ Character	Medium/High(Primarily Kinetic Issues, Target Identification and Assessment)	High(Kinetic and Non-Kinetic Issues, More nuanced Political-Cultural and Religious issues etc.)	Medium(Economic, political, cultural, legal, issues etc.). Quasi-military.
Decision Speed	High(Destruction and Defeat of Enemy Forces)	High-Medium(Destruction of Enemy, pacification of populace, concentration on winning "hearts and minds" growing)	Medium-Low(Establish functioning society). Consolidation of "hearts and minds" campaign.
Key Players (in networking activities)	"Blue" forces (all friendly military forces of various services)	Military Forces—principally land and supporting elements (soldier-centric).	Remaining military forces, civilian support, other government agencies, NGOs, indigenous elements, etc.
Requirements for NEOps	Primarily technical means (sensor and surveillance technologies, satellite intelligence)Basic data on enemy characteristics, disposition, location.Robust, reliable sensor-shooter linkages.Medium level training	More and More HUMINT oriented requirements.High need for fusion of complex data. Perhaps data flowing from contact with adversaries.Need for analytical skill for complex decision-makingSensor systems.Very robust communication, high bandwidth, etc.High "need to share." Intensive training and exercising (key cognitive abilities—anticipation, reaction speed, opportunism, rapid adaptation).	High need for fusion of diverse types of data. Need for networking beyond military.High Need to ShareAnalytical skills for complex decision-makingSensor systemsMedium to high level of training.

Notional Table of NEOps-Related Requirements (Based on Mission Type)

Source: Based on Stephen Metz and Raymond Millen, "Intervention, Stabilization, and Transformation Operations: The Role of Landpower in the New Strategic Environment," Parameters, Vol. XXXV, No. 1, Spring, 2005, at http://carlisle-www.army.mil/usawc/Parameters/05spring/metz.pdf

information sharing and SA it promises would aid in transit to a lighter, faster, more agile, mobile, lethal and knowledge-based force. And careful integration of NEOps into Army planning, doctrine and capabilities would conceivably enhance the Forces' ability to effectively perform virtually all of its operational functions (i.e. Command, Sense, Shield, Sustain and Act) and ultimately, its key missions.[16] The result would be a more effective, truly maneuverist approach to future operations and missions. Not surprisingly, recent CA guidance calls for the Army to "…digitize to the lowest level possible."[17]

Prospects for effective participation in an integrated, "joint" approach to military operations would also rise—with a technologically networked force enabling efficient, effective Army cooperation not only with other service elements (i.e. Navy and Air Force) but other government departments (OGDs) and even non-governmental

Future combat systems must be network enabled but not network dependent.

organizations (NGOs). So too would the CA's ability to achieve interoperability with the forces of key friends and allies (e.g. the US, Britain, Australia). For an Army that focuses on providing strategically relevant and tactically decisive contributions to operations and missions within a broad coalition framework, the prospect of gaining added capability in this area would hardly be trivial. In fact, such capability could well be essential to ensure future relevance and ultimately—mission success.

Obstacles and Risks

Implementation of such a vision could nevertheless face considerable challenges. In addition to the acquisition of requisite technologies, policy-makers would face a range of issues regarding their integration, management and utilization.

The establishment of data standards, procedures ensuring greater interoperability of networks and the standardization of processes for information handling from sensors and information to decision-makers and effectors would all be essential. Laws and

procedures would need to be revised—both to facilitate movement of information and access internally as well as with foreign counterparts. And personnel would require thorough education and training not only in becoming more technologically adept (i.e. human-machine interface), but also more effective in the collection, transfer and analysis of information within and between organizations.

Beyond this, the concept could involve the development of doctrinal and organizational concepts and command doctrines better suited to exploiting the potential that a physically networked force could provide. In essence, NEOps would demand that institutions and organizations shift from "a need to know" to "a willingness to share" culture. In order to take full advantage of a network-enabled force, the chain of command would at times be less hierarchical in character, control more indirect, and interoperability more all encompassing than is currently the case. And as capacities for enhanced information sharing and analysis mature and become institutionalized, demands for other changes could well follow.

The economic, technological, institutional and cultural challenges involved in bringing about such changes are thus likely to be considerable

The economic, technological, institutional and cultural challenges involved in bringing about such changes are thus likely to be considerable. In fact, land forces could face a particularly stiff challenge. Indeed, the sheer number of nodes that would require networking (i.e. soldiers), along with the need to ensure robust, reliable operation of the network—even under the most complex and harsh circumstances would demand a high level of effort and commitment (i.e. ground combat, peace support operations). Notably, in those cases in which networked ground forces have been fielded, technical limitations on bandwidth have already been evident, as have compatibility and protocol issues. Whether the army leadership would be willing to make the adjustments needed to accommodate such reforms is unclear.[18]

Problems could also extend beyond realization of a technologically networked force to its use. Alongside promises that the information superiority and enhanced SA would result in dramatically improved military effectiveness and efficiency, are lingering concerns over possibilities of information overload, inappropriate information sharing and chronic micro-management. Should such difficulties materialize, fast decision-making and seamless execution of missions and tasks could easily be replaced by widespread confusion, gridlock and frustration.[19]

Nor is it entirely clear that a network-enabled force would necessarily offer the combat advantages which many claim that it would produce. Notably, existing elaborations of NEOps give little consideration to the ability of adversaries to adapt in the face of new technologies. Assumptions employed concerning the detection and identification of adversaries tend to be overly optimistic. And consideration of the capacity of potential adversaries to employ effective countermeasures against a networked force is often low. Yet as history shows, effective tactics can often be used to compensate for technological superiority.[20]

A tightly connected force could also incur vulnerabilities. On the one hand, it could offer a lucrative target for either conventional or cyber-attacks. On the other, it could be utilized by an intelligent, adaptive enemy as a gateway to spread disinformation and chaos. In both instances, the results of successful attack could be disastrous for Army operations and missions.

Opportunities and Assets

Still, the burdens and risks of foregoing exploration of a network-enabled capability could well exceed those associated with its adoption. Potential dangers notwithstanding, even tentative evidence of the utility of NEOps is difficult to ignore. The fact that such evidence has already generated considerable interest in more technologically networked forces within the military establishments of a number of important allied countries makes the case for exploration all the more compelling.[21] At the very least, it suggests that NEOps may not only yield benefits, but that a good number of obstacles might well be avoided if such a capability is pursued with caution.[22]

Within such a context, failure to actively explore the opportunities that may be inherent in networking capabilities would be unwise. Indeed, not only would such neglect risk forgoing the potential benefits which NEOps could provide in terms of the effectiveness of the land force itself, but also the increased international influence which would likely result from the increased interoperability that it would produce.

Perhaps most significant to the pursuit of NEOps is the fact that Army experience with networking is both deeper and more complex than generally acknowledged

Beyond this, a number of factors suggest that the CA may be particularly conducive to a more networked vision. The fact that the CA is relatively small and well disciplined may work to reduce both the economic and technological obstacles associated with networking. Longstanding and close cooperation with allies (e.g. US, Australia, NATO) moreover, offers grounds for additional optimism. Ideally, such linkages should serve as a useful guard against acquisition of immature or inappropriate technologies.

Movement toward a more technologically networked force may also be aided by the realities of generational change. In this regard, insights from behavioural science suggest that upcoming generations are not only inclined be more computer and net-savvy than their predecessors, but also more likely to value principles and practices associated with a network-enabled vision. In particular, they are generally less impressed by rank and would thus tend to take well to the more flattened (e.g., decentralized) decision-making structures that the effective conduct of NEOps would require.

Yet perhaps most significant to the pursuit of NEOps is the fact that Army experience with networking is both deeper and more complex than generally acknowledged. The very nature of land force operations has long involved networking—with mission success typically dependent on the ability of many soldiers to act both as individual units of data processing and action (i.e. nodes, sensors and shooters) as well as collectively

to achieve a desired end state (as defined by the commander) in the best manner possible.

The logic informing the tactics of company attack is somewhat illustrative. Such action typically involves the successful coordination of relatively large numbers of infantry, limited platforms and often minimal command and control. In essence, 120 independent sensor-shooter packages (i.e. infantrymen) work with 10-15 other independent sensor-shooters (APCs, or tanks), and at times, one or two radio sets (command and control) to achieve a mission in an atmosphere rife with chaos (e.g. shouting that often cannot be heard due to gunfire). Yet all combine to produce what can be considered an example of "swarm" tactics. Well-established and deeply ingrained cultural and doctrinal techniques allow the force to "synchronize efforts on

A soldier trains in a simulator. Net-enabled forces will increasingly employ these capabilities.

the fly"—enabling it to minimize battlefield friction and maximize combat effect through the creation of an unconscious (but ultimately deliberate) synergy. In effect, battle space awareness is created through non-technological means.

In the case of Canada's Army, longstanding responsibilities and demands have generated a training regime and mindset at the individual soldier level strongly informed by many of the qualities and skills that NEOps requires and must foster to be successful. In this regard, skills such as effective verbal and non-verbal communication and coordination, information processing and analysis, and timely decision making are already key aspects of soldier development.[23]

Particularly important is the presence of an organizational milieu conducive to the development of trust, initiative and critical problem solving—qualities that are crucial to the development and effective utilization of a more networked force. In this regard,

a strong "spirit of egalitarianism" and the CA's philosophy of "mission command" are key. Both work to encourage more decentralized decision-making and with this, the development among soldiers of a wider, more strategic view of operations and missions. Soldiers are thus better able to consider the broader implications of actions taken in the field. The fact that CA command philosophy further stresses "uncertainty and surprise as inevitable aspects of warfare" and the need to cultivate an "ability to undertake decisive action within such an environment" offer an additional benefit.[24] Indeed, this should serve as an important caution against any tendencies to develop excessive reliance on the information that any network would provide.

Such a milieu has resulted in a force already capable of engaging in effective networking "on the fly." In Bosnia, for instance, a number of situations were stabilized largely as a result of the skills and capacity for soldier initiative and person-to-person networking which the Army develops and encourages.

No clear examples of a fully networked force currently exist

In one case, Canadian troops used such "low-tech" networking to ensure that crucial international aid eventually reached an area that would have been neglected had certain perceptions at both the political and operational levels remained dominant. Armed with a sound understanding of realities "on the ground" these troops not only took the initiative on their own to provide aid to those in need, but lobbied their superiors and international aid agencies to investigate the situation for themselves. Eventually, aid agencies took an interest, critical support arrived, and higher political goals were advanced.

In essence, ground troops accomplished what the politicians and higher command wanted—rather than what they had originally been ordered to do. They created their own network and utilized it to fashion the right response to a problem that would have been exacerbated if misinformed assumptions held at higher levels were allowed to persist.[25]

Such qualities and capabilities represent the essence of what effective networking entails.[26] More to the point—the fact that they are already present within the CA indicates the presence of a strong foundation upon which a more technologically networked capability can be built.

Toward a More Network-enabled Army

Fashioning an approach to NEOps that manages the challenges associated with its pursuit, minimizes the risks which it poses and effectively harnesses the networking assets which the CA already possesses nevertheless remains a difficult task. It is particularly daunting in light of the fact that despite considerable interest and increasing experimentation and application of networking concepts and technologies within various militaries, no clear examples of a fully networked force currently exist. Indeed, an integrated plan for the creation of an effectively networked force has yet to materialize.

Still, recognition of both the challenges and opportunities associated with NEOps suggests that pursuit of such a strategy must be gradual, limited and tightly focused.

Indeed, while the concept itself and the initial results of its application indicate some promise, the range of economic, technological and cultural constraints that confront it suggests the need for a cautious, evolutionary approach. Given constraints on CA resources, exploration requires the pursuit of initiatives that offer optimal return on investment.

To this end, efforts should concentrate attention primarily—although by no means exclusively—on the human aspects of the equation. In particular, a CA approach must be informed by an appreciation of the fact that ultimately, NEOps is less about technology per se than it is about fostering certain habits of mind, social behaviours and decision-making skills to better facilitate the realization of military objectives. Should excessive faith be placed in technology, not only are the economic, technical and institutional—cultural barriers to progress likely to be excessive—but the risks as well are likely to be excessive. Indeed, such a strategy could even work to nullify much of the Army's already solid capacities pertaining to the human dimensions of networking. The result could well be an overall decline in networking capacity and ultimately—in military effectiveness.

Consequently, the CA must build on the fact that it already has a number of cognitive and social assets that are essential to an effectively networked force.[27] And the development and acquisition of networking technologies must proceed—first and foremost—with a view to fostering and extending these assets and their uses whenever possible.

Beyond this, while NEOps is ultimately a CF, and in fact a government-wide issue, the CA must ensure, as much as possible that its acquisition and integration of all NEOps-related capabilities be governed, first and foremost, by how well they serve Army missions and those charged with performing them.[28] Not only would this help to ensure that existing networking strengths are guarded and extended, but also that the possibilities which technology does offer can be explored in a manner that reduces the obstacles and risks that accompany it. It would also work to make the most out of the already scarce economic and human resources that the CA has at its disposal.

Developing an Army Strategy: Some Suggestions

Movement along this road is already underway. Recent Army deliberations are strongly premised on the necessity of following a gradual, phased and targeted approach to the issue. And while much effort has indeed been devoted to a number of the technological aspects of networking—most notably, in the integration of intelligence, target acquisition, reconnaissance and other information-generating assets (i.e. ISTAR)—there is also strong recognition of the need to place effort on developing the human aspects of the networking enterprise.

Still, additional steps are required. Particularly challenging from a CA standpoint is the identification and pursuit of capabilities more directly tailored to Army requirements and needs. While its advocates maintain that NEOps possesses a wide applicability, both its theoretical development and practical application have been US-based and heavily focused on the use of NEOps in high-intensity, primarily symmetric, conflict. Work focusing on its applicability to asymmetric conflict (e.g. terrorism, insurgencies)

and to operations other than war (i.e. humanitarian operations, disaster relief) has been far less apparent.[29]

Yet it is precisely these contingencies that currently represent the main areas of CF and in particular, Army activity. And it is these areas that will likely remain key Army concerns in the future. Without clearer notions of how a more technologically networked force would enhance Army effectiveness in these areas, concrete ideas about networking requirements—(both technological and human) are unlikely to materialize. Nor, for that matter, will it be easy to gain a fully adequate sense of the specific architectures, capabilities and likely costs that transition to effective NEOps will involve.

To be sure, it is possible—perhaps even likely—that some of the networking capabilities required for use in high-intensity operations would serve equally well in contingencies such as stabilization and peace support operations (PSOs), reconstruction efforts and humanitarian aid. Yet basic differences in circumstances suggest reason to be cautious.[30] For instance, while the former would tend to emphasize prompt identification and destruction of enemy targets from a distance, it is likely that the latter would require closer soldier contact with both enemy forces and/or indigenous populations. This suggests the need for greater emphasis on technology in the former and on person-to-person contact in the latter.[31] It also indicates that networking capabilities and skills required in each case may differ. Simply put, possible commonalities in capabilities across the spectrum of operations must be demonstrated rather than simply assumed.

In part, evolution to a NEOp'd force will doubtless entail a long and arduous process of cultural and institutional change.

Ultimately, it may turn out that in contingencies such as PSOs, post-war reconstruction and humanitarian emergencies, non-technological aspects of NEOps (i.e. capacity for effective social interaction, for effective adaptation and decision-making under conditions of uncertainty) are in fact central to mission effectiveness. As such, existing CA strengths in these areas, along with an already strong orientation toward peace support and humanitarian operations, may work to allow adoption of a version of NEOps that is highly effective and yet relatively modest in terms of cost.

Yet whatever the result, it is clear that research examining what networking capabilities make the most sense for international peace support operations, humanitarian intervention and for the domestic operations that the Army is most likely to perform is essential. Such study might include detailed analysis of past operations featuring CA involvement with an eye to identifying those areas in which possession of a networked capability would have led to appreciable gains in mission performance and/or outcome. Identification of the possible technological options and processes that might have been useful in such circumstances would then follow. To the extent that past practice is considered too narrow in focus, investigation could be extended to include the exploration of hypothetical contingencies and/or historical cases which are relevant but which did not involve CA participation. By so doing, relevant, cost-effective networking capabilities could be more easily identified and pursued.[32]

Careful investigation of the networking practices of other armies is also important. In this regard, and given the sheer range of its networking efforts, developments throughout the US military will continue to warrant close examination. Yet clear differences in terms of scale and focus suggest that the results of such efforts may not be entirely applicable to or appropriate for the CA. Rather, the experiences of other land forces—most notably the British, German, Australian and Dutch are likely to be more closely related to CA circumstances.

In fact, research suggests that these countries tend to take an orientation to the issue of networking that is distinct from that of the US. According to one study, while the US is inclined to view the network as the wholesale structure of the entire joint force, other countries "are more inclined to exploit networking by delegating authority to officers in the field than by exercising tight control from the task-force commander level."[33] They also tend to see the network as a practical enabler of individual units and officers faced with "retail-level" problems.[34] Consequently, careful and sustained monitoring of networking efforts by these countries may offer particularly useful lessons for the CA.

Beyond monitoring developments among our allies lies the need to further cultivate and extend the networking skills already present in the CA. Notwithstanding evidence of NEOps-conducive qualities and skills at the level of the individual soldier, a need for broader and deeper change also exists. While a number of doctrinal developments do indeed appear conducive to a more NEOp'd land force, theory is not always confirmed by practice. Despite the intent behind mission command, and the potential it holds for creating a more "network-aware," "network-oriented" force—possibilities for micro-management and risk-aversion as well as for dogged adherence to old methods and routines continue to exist. Accordingly, arrangements must be created to ensure that the latent potential in such concepts is not squandered and that widespread change in methods of operation is facilitated. In their absence, truly creative networking will remain less a routine than a function of chance and good fortune.

In part, evolution to a NEOp'd force will doubtless entail a long and arduous process of cultural and institutional change. Yet other, more immediate initiatives may also work to help ensure that possibilities for change are enhanced. In this regard, one possible step would involve the creation of education, training and recruitment programs explicitly geared toward enhancement of the ability to effectively perform in a network-enabled environment.

Such programs would focus on the development of key networking qualities and skills.[35] Emphasis would be placed not only on an ability to work comfortably with information technologies, but also on the cultivation of key decision-making skills—most notably the ability to make decisions under conditions of high complexity. By so doing, the presence of key NEOps-related assets such the ability to anticipate, to react quickly, and to rapidly adapt to changing circumstances and conditions would be more deeply ingrained throughout the force.

Finally, an investigation of potential counters to network enabled capabilities must accompany their development and acquisition. Possible steps in this direction could

include historical analysis of past strategies and tactics employed by forces faced with technologically superior adversaries, the creation of a multidisciplinary "red teams" or "cells" charged with brainstorming counters to networking capabilities, and the inclusion of such analysis in any simulation and gaming involving network-enabled forces. Such scrutiny would not only help guard against the possible vulnerabilities that could attend a networked force, but increase the prospects that the force that is fielded offers value for money.

Conclusion

Thus far, a detailed CA strategy for the development of a more NEOp'd land force has yet to emerge. Despite increasing interest and debate within Army circles, pursuit of NEOps is still in its preliminary stages. No clear CA roadmap for NEOps exists.

Still, movement toward a more network-enabled land force is desirable. Not only does the concept and available evidence flowing from its application suggest that NEOps hold significant promise for the facilitation of CA transformation efforts, but more importantly, for enhancing Army capabilities and effectiveness in the years ahead. Beyond this, the CA possesses a number of characteristics that are strongly conducive to possession of an effective network-enabled capability.

Realization of a suitable vision will nevertheless take time. In fact, careful assessment of the realities facing the CA strongly suggests the need to adopt of a gradual, focused approach to the issue. Such an approach must play to the CA's existing strengths. Most notably, it must emphasize the human as opposed to the technological aspects of networking. Moreover, it must at all times be guided by a careful consideration of likely CA missions and roles. Only then will the risks associated with NEOps be minimized and the benefits it promises unfold in the years ahead.

About the Author...

Peter Gizewski was educated at the University of Toronto (Trinity College) and Columbia University where he was a Canadian Department of National Defence Fellow in Military and Strategic Studies and a MacArthur Fellow in Conflict, Peace and Security. He worked for over nine years as a foreign and defence policy analyst at the Canadian Institute of International Peace and Security (CIIPS), and the Canadian Centre for Global Security (CCGS) in Ottawa. He was also Senior Associate at the Peace and Conflict Studies Programme, University of Toronto, and Postdoctoral Associate in Non-Proliferation Arms Control and Disarmament (NACD) at the York Centre for International and Security Studies, York University. Currently, Mr. Gizewski is a Defence Scientist with the Centre for Operational Research and Analysis (DRDC-CORA), Department of National Defence, and is serving as the Strategic Analyst to DGLCD in Kingston, Ontario.

Endnotes

1. The term Network-Enabled Operations (NEOps) is essentially a derivative of the broader concept of Network Centric Warfare (NCW), and is aimed at more fully capturing both the means through which networking could occur (i.e. humans as well as technology) as well as the scope of action to which such operations could apply (i.e. military operations other than war as well as war itself). That said, the two terms exhibit considerable similarity both in their identification of the tools and processes through which a true networking capability would be realized and in the outcomes that would result from its use. In fact, a widely cited definition of NCW continues to offer a good summation of such processes and effects. Specifically, NCW is "…an information superiority enabled concept that generates increased combat power by networking sensors, decision makers, and shooters to achieve shared awareness, increased speed of command, higher tempo of operations, greater lethality, increased survivability, and a degree of self-synchronization." See David S. Alberts, John J. Garstka and Fredrick P. Stein, *Network Centric Warfare: Developing and Leveraging Information Superiority*, Washington, DC: DoD Command and Control Research Program; 2003, p. 2.
2. Ibid.
3. NEOps could involve: 1) the use of networking technologies to facilitate the improved execution of existing military plans doctrines and tactics, 2) the development of new plans doctrine and tactics so as to better exploit the possibilities inherent in technology and or ultimately 3) the application of new technologies and thinking to develop a new style and practice of combat. In a NEOp'd military, forces would not only perform existing operations better (quicker, more efficiently and effectively) but possibly undertake missions that could not be attempted if such capabilities had not existed. By offering a capacity to gain near real-time situational awareness.
4. The concept rests on four basic tenets or assumptions.
   A robustly networked force will improve information sharing;
   Information sharing will enhance the quality of information and shared situational awareness available;
   Shared situational awareness will enable collaboration and self-synchronization and will enhance sustainability and speed of command and;
   These in turn, will dramatically increase mission effectiveness.
   Such networking moreover would occur across all four domains of warfare (i.e. the physical, information, social and cognitive domains).
5. As Smith notes: "The real payoff in network-centric operations is foreshortening combat by causing the enemy to yield long before his means to resist have been exhausted, or long before additional friendly forces might be expected to arrive in the crisis area." See Edward R. Smith, "Network-Centric Warfare: What's the Point?" *Naval War College Review*, Vol. LIV, No.1, (Winter 2001), p. 64.
6. See Edward R. Smith, *Effects Based Operations: Applying Network Centric Warfare in Peace, Crisis and War*, Washington, DC: DoD Command and Control Research Program; July 2003, p.108.
7. Richard E. Hayes, "Network Centric Operations Today: Between the Promise and the Practice," *RUSI Defence Systems*, (Summer 2004), p. 83.
8. Ibid.
9. Ibid.
10. Ibid.
11. Ibid., 84.
12. As quoted in Director: Force Transformation, Office of the Secretary of Defense, *The Implementation of Network-Centric Warfare*, Washington DC: US Government Printing Office, January 2005, p.30.
13. Richard E. Hayes, "Network Centric Operations Today: Between the Promise and the Practice," *RUSI Defence Systems*, (Summer 2004), p. 84.
14. Ibid., 30.
15. Department of National Defence, *Purpose Defined: The Force Employment Concept for the Army: One Army, One Team, One Vision*, (Ottawa: Department of National Defence: 2004), p. 10.
16. As the *Force Employment Concept* itself notes: "(p)roperly exploited, increased network connectivity will provide the means to integrate capabilities across the five operational functions and, in turn, enhance the application of combat power. (And) (s)ituational awareness and understanding will allow the Army to attack enemy weaknesses from a position of strength." See ibid., 14.
17. Ibid., 39.
18. In fact, early criticism of NEOps has raised concerns that current ideas overemphasize technology to the detriment of manpower. And suggestions among advocates that NEOps promises manpower savings only works to reinforce such concern. This may work to ensure that institutional and cultural barriers to NEOps may be especially difficult to surmount.
19. Criticism of network-centric thinking is plentiful. For particularly insightful critiques, see Thomas P.M. Barnett, "The Seven Deadly Sins of Network-Centric Warfare," *US Naval Institute Proceedings*, Vol. 125, No. 1, January 1999, pp. 36-39, Aldo Borgu, "The Challenges and Limitations of Network Centric Warfare: The Initial Views of an NCW Sceptic," *Australian Strategic Policy Institute*, September 2003, L. Col. H.R. McMaster, Crack in the Foundation: Defense Transformation and the Underlying Assumption of Dominant Knowledge in Future War, Center for Strategic Leadership, US Army War College, November 2003, and Fredrick W. Kagan, "War and Aftermath," *Policy Review*, No. 120, (August and September 2003).
20. Indeed, it is important to recall that it took boots on the ground to capture Saddam Hussein in Iraq. The Northern

alliance played a role in the Taliban's collapse that was equal if not more significant than US strike operations. And the use of considerable airpower in Kosovo could not destroy the Serb Army.
21. For a useful overview of the efforts of a number of European countries, see Stefan Nitschke "Network-Centric Warfare—The European Initiatives," *Military Technology*, 3/2004, pp. 18-26.
22. In this regard, it should be noted that many of the risks and dangers cited as attending the development of NEOps fall in the realm of the potential as opposed to the *inevitable*. In fact to the extent that such critiques are heeded it is possible that many of the red flags they raise can be avoided.
23. The author is grateful to L. Col. Shane Schrieber for his elaboration of this illustration. Interview with L. Col. Shane Schieber, Directorate of Army Doctrine, Fort Frontenac, Kingston, Ontario, 19 August, 2003.
24. Department of National Defence, *Purpose Defined: The Force Employment Concept for the Army: One Army, One Team, One Vision*, (Ottawa: Department of National Defence: 2004), pp. 9-10.
25. Perhaps not surprisingly, proponents of NEOps point to the Canadian soldier as ideal for an effectively networked force. According to David Alberts and Richard Hayes, the qualities and skills practiced by Canadian troops in the field exemplify those of General Charles Krulak's "strategic corporal"—the model warrior for the conduct of military operations in the information age. See David S. Alberts and Richard E. Hayes, *Power to the Edge: Command Control in the Information Age*, Washington DC: CCRP Publication Series, June 2003, pp. 66-67.
26. Viewed from this perspective, movement toward a network-enabled force would represent less a total overhaul or reorientation of past practice than the logical extension of a state of affairs that has generally been practiced for years. While the technologies involved are clearly more advanced and the spatial-temporal scope which NEOps involves may be wider, the fundamental aim along with the human processes necessary to achieve it remains much the same—everyone acting in concert to achieve a desired "end-state," (as defined by the commander), in the best way possible. Indeed, according to one officer "NEOps is simply …a natural extension of what the Canadian Army already does and is continuing to do."
27. Notably, in many of the case studies used to "prove" the superiority of NEOps, the actual difference is not in the technology, but in how that technology was used (or allowed to be used) by the group. For other Services, this cultural barrier may be the single most difficult obstacle to overcome in adopting NCW. Interview with L. Col. Shane Schrieber, Directorate of Army Doctrine, Fort Frontenac, Kingston, Ontario, 19 August, 2003.
28. To be sure, this will require considerable liasing with other players and stakeholders. Yet the CA must not be pushed to keep up with other services in the process. Decisions must be carefully tailored to maximization of existing strengths. They must also proceed from a recognition of the fundamental differences between the three environments. Adaptation should not occur for the sake of technology—but instead for the sake of increased effectiveness.
29. In fact, some even contend that the dynamics inherent in current US visions of networked operations tend to ignore the requirements for effectively addressing conflict at lower levels—with the capacity to kill from a distance eclipsing the need to establish presence in contested areas and contact with locals by deploying boots on the ground. For an interesting discussion along these lines within the context of operations in both Afghanistan and Iraq, see Fredrick Kagan, "War and Aftermath," *Policy Review*, No. 120, (August and September, 2003).
30. As one analyst observes "…even if it is assumed that conventional war is the most demanding, it doesn't automatically follow that a force that is structured along those lines can automatically deal with the challenges of other military operations…The Vietnam and Soviet-Afghan War would seem to be ample testimony to that fact." See Aldo Borgu, "Network Centric Warfare and Military Operations Other then War: Counterinsurgency in the 21st Century," A presentation to the Network Centric Warfare Conference "Meeting the Challenges of Warfare in the Information Age" Australian Defence Force Academy, 24-25 November 2004, p.5.
31. Dealing with insurgency raises similar issues. In such cases, distinguishing between insurgent and non-insurgent is a key issue. And while technical means may offer some useful information about such adversaries, access to the most significant data may be out of their reach (e.g. who the insurgents are, where they come from, their recruitment methods, how they plan their operations, and how they measure success). Indeed, addressing such issues is more likely to involve interrogation, HUMINT and person-to-person networking. Ibid., 7.
32. Notably, one area requiring work is the development of sensors that are better tailored to peace enforcement and peacekeeping situations. Indeed, a deployable sensor—perhaps on the order of a land-based millimeter view scanner capable of identifying the individual with the gun under his coat—would be ideal. At present, funded programs capable of delivering such capability in the short to medium term do not exist.
33. David C. Gompert, Hans Pung, Kevin A. O'Brien, Jeffrey Peterson, *Stretching the Network: Using Transformed Forces in Demanding Contingencies Other Than War*, OP-109-RC, April, 2004, p. 26.
34. Ibid.
35. Education and training might involve greater use of simulation and virtual reality. As for recruitment greater emphasis might be given to attracting older, more experienced candidates with demonstrated skills in networking and decision-making. For a more detailed discussion of this idea see David C. Gompert, Irving Lachow, Justin Perkins, *Battle-Wise: Gaining Advantage in Networked Warfare*, Center for Technology and National Security Policy, National Defense University, January 2005, pp. 23-26.

FROM PENTOMIC DIVISIONS TO CANADA'S ARMY OF TOMORROW: A STUDY ON TRANSFORMATION

Colonel Denis Brazeau, OMM, CD

According to modern theorists of war, we are on the verge of a great historic transformation. Even the most casual observer can attest to the speed and breadth of change that have affected many aspects of our lives in the past few years. The decade of the 1950`s also witnessed profound change as a result of the introduction of atomic and thermonuclear weapons. These weapons created fear and uncertainty, and were a catalyst for a fundamental change in the type of warfare facing the United States. The American Army responded by restructuring its divisions in order to fight on the nuclear battlefield.

In fact, US Army experience in coping with the "nuclear revolution" of the early Cold War years may hold lessons for transformational efforts in our own time and army. This essay will examine both the transformation that occurred within the United States Army in the 1950s and that occurring within the Canadian Army today. The main aim of this paper is to compare these two transformations with an eye to identifying ways of improving the ongoing Canadian Army transformation effort in terms of structure, technology, doctrine, training and jointness.

To accomplish this, the essay will set the scene by defining transformation and the diffusion of innovation. It will then provide the context of the strategy devised by the Eisenhower Administration to deal with the proliferation of nuclear armaments in the period following the end of the Korean conflict (i.e. 1953) until 1959. The background leading to the United States Army's decision to implement pentomic divisions and more specifically the different studies dealing with the new nuclear battlefield will be considered. A review of the structure and characteristics of the pentomic divisions will complete this part of the essay.

The essay will then examine the strategic context for the Canadian Army transformation of the past 15 years. Specifically, we shall study how the Canadian Army sought to recast itself from a Euro-centric Cold War force to a strategically relevant and tactically decisive medium-weight force.[1] The essay will outline the activities and conditions affecting the Canadian Army during the 1990s, namely the reduction of the armed forces in the context of the need for greater efficiency, NATO expansion and the new paradigms related to the information age, globalization and economic interdependency. The five combat functions construct will then be used to examine the proposed changes. The training framework and the reason behind the use of an interim model for training will complete this part.

The essay concludes with a comparison of the lessons learned in the creation and demise of the pentomic division with current Canadian Army transformation in the following domains: funding, technology, flexibility, training and experimentation and finally cultural issues.

Brazeau, Colonel Denis, 'From Pentomic Divisions to Canada's Army of Tomorrow: A study on Transformation' Canadian Army Journal Vol. 8.2 (Summer 2005), 36-51.

Transformation

To say that the Army as an institution is engaged in transformation illustrates the strong perception that fundamental change in the strategic, operational and/or tactical context of warfare has occurred. It is worthwhile to understand the reasons behind such a transformation as it may provide some interesting insights on the process and its chances of success. The Canadian Forces defines transformation as follows: "In the military context, transformation is a process of strategic re-orientation in response to changed circumstances, designed to make substantial changes in the nation's armed forces to ensure their continued effectiveness and relevance."[2] For a military organization, transformation may include the development of new war-fighting concepts, the reorganization of structures, the introduction of new doctrine and tactics, the modification of training and the improvement of support.[3] It may also include new means of integrating technology, a recurring theme especially prevalent in American thinking. Historically, the importance of integrating technologies has been amply demonstrated. Transformation seeks to maintain relevancy by keeping up with allies, or more importantly, with potential opponents.

In the military context, transformation is a process of strategic re-orientation in response to changed circumstances, designed to make substantial changes in the nation's armed forces to ensure their continued effectiveness and relevance

There seems to be common agreement that the introduction of nuclear weapons from 1945 onwards was revolutionary. The current trends based on network-centric warfare, information dominance and effects-based operations are too recent to warrant such a label.[4] However, one cannot deny the wave of transformations currently "infecting" many countries. Chris C. Demchak listed in April 1997 a total of sixty-eight nations that had embarked on the modernization of their armed forces.[5] He further remarked that neither security threats nor internal economic pressures were forcing states to change their militaries. Nor did coercive diplomacy and dependence on a superpower explain the rapid spread of the "modern force" paradigm that was sweeping through countries with vastly different resources and threat environments. Rather, the transformation was simply because this new form was perceived as legitimate and modern.[6]

Finally, the diffusion of innovation as an expression of transformation is much more rapid today than ever before. Information is much more affordable, it has broad commercial applications and it faces almost no restriction.[7] Hence, the urge to transform is widespread.

Strategic Context In the Nuclear Age (1953-1959)

The detonation of atomic weapons in the closing days of the Second World War signalled not only the dawning of a new era but also the accession of the United States to an unparalleled status on the world stage. Both the American and Canadian economies benefited directly from the war effort with the added bonus of avoiding destruction of their infrastructure. However, America's pre-eminent position was

short-lived. An intense ideological conflict erupted with the Soviet Union and the Communists, and Soviet retention of large standing conventional forces in Central and Eastern Europe soon prompted the creation of a new alliance, the North Atlantic Treaty Organization. Along with this, Mao's victory and establishment of the People's Republic of China on October 1st 1949 and the so-called "loss" of China and the Korean conflict in June 1950 all worked to disturb profoundly the Americans. So too did growing evidence of Moscow's intention to close the nuclear weapons gap as rapidly as possible through any means at its disposal. This challenge was magnified by the development of the H-bomb. As early as November 1, 1952, the Americans had tested a "non-deliverable" 10 megaton H-bomb in the South Pacific with deliverability achieved in early 1954. The Soviets had tested a similar device in August of 1953 followed by a true H-bomb in November 1955 with a yield of about 60 megatons.[8]

No. 1 Radiation Detection Unit of the Canadian Army during Exercise HOPE, 1951

When Eisenhower came to power in January 1953, his foreign policy, dubbed the "New Look," called for a greater American involvement in overseas affairs.[9] Eisenhower was intent on protecting the American economy by significantly reducing the military budget. He also realized that rough nuclear parity with the Soviet Union meant that any escalating war would bring about unacceptable destruction. In fact, as a former military commander who had witnessed firsthand the destruction of war, Eisenhower was convinced that the overall aim of US policy should be to avoid nuclear war at any cost.

That new policy was described in a speech given by his Secretary of State, John Foster Dulles, in January 1954. Dulles said the United States would no longer meet aggression on the same terms that the aggression had been made. Indeed, it was widely understood that any attack made with conventional forces, such as that in Korea, would be met with a nuclear response delivered by air power. Moreover, such a response would occur at times and places of America's own choosing, and as such could well focus on Moscow or Peking as opposed to the point of any initial enemy attack.[10] This basic American security policy was encapsulated in the term "massive retaliation." Although this policy was hotly debated throughout the Eisenhower years, there is little doubt that Eisenhower himself was unwavering in his intent to eliminate any strategy other than one that would automatically escalate into thermonuclear war and that he would be ready to launch the bombers when the moment came.[11]

Background to the United States Army Transformation

General Ridgway, Army Chief of Staff from August 1953 to June 1955, was under pressure from the Defence Department to field smaller units to fulfill the

Administration's objective of reducing military expenditures. He noted that divisions had increased firepower and capabilities but were larger and less mobile than their World War II counterparts. He directed a study to make divisions more mobile, more flexible and less vulnerable to atomic attack. Ironically the end-result, the Atomic Field Army, proved to be a larger organization than that which it replaced.

Soldiers training with atomic weapons during 1950's.

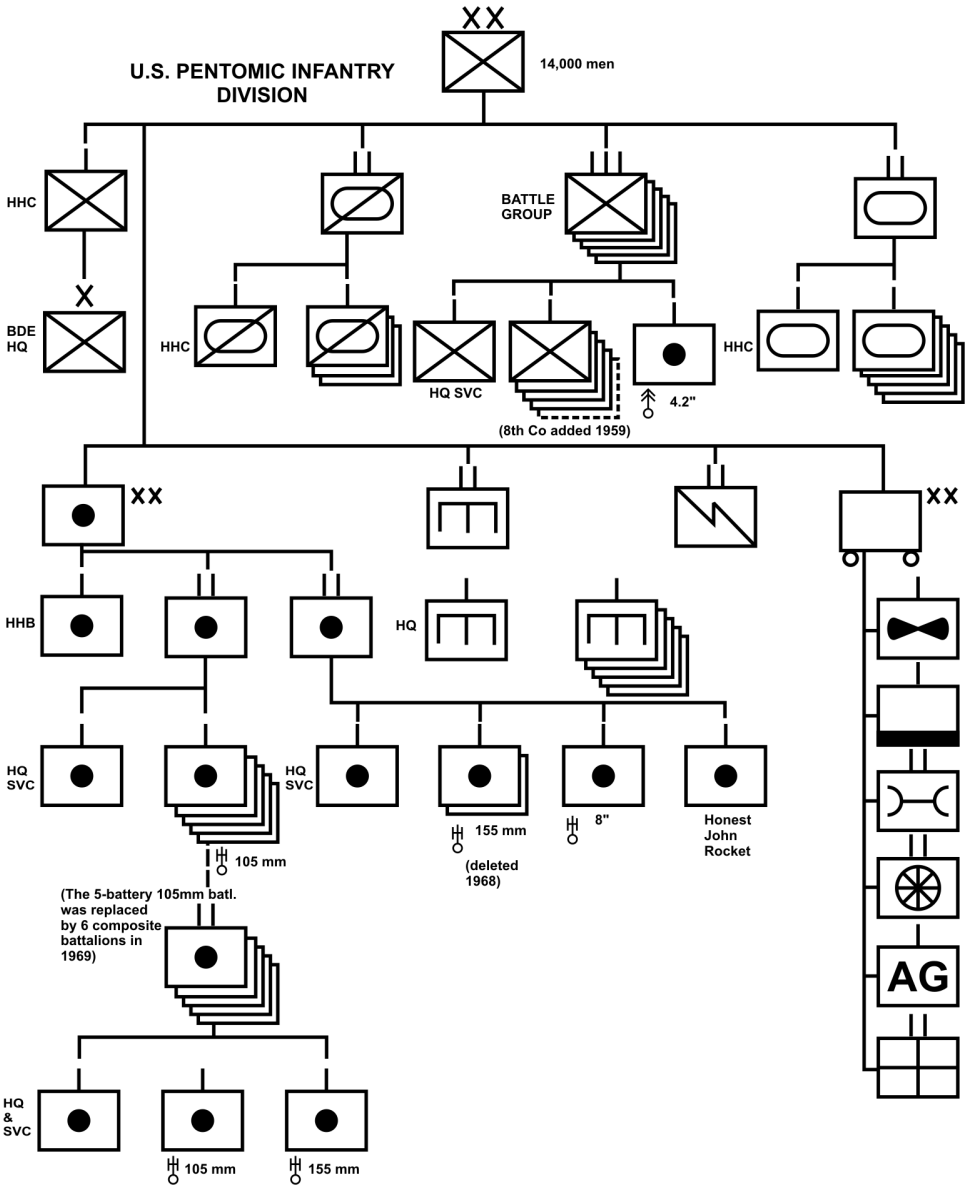
Ridgway also clashed with Eisenhower as the new National Security Policy was being translated into budget share and force levels. This opposition focused primarily on his disagreement against the efficacy of massive retaliation, and continued until he was "eased into retirement" in June 1955. For Ridgway these policies were inconsistent with America's traditional religious and moral principles. Indeed, he warned against allowing military advisers to become politicized and co-opted by civilian officials who had little appreciation of the soldier's role, and refused to abandon the Army's traditional conception of warfare in order to accommodate enthusiastic theorists who bore little or no responsibility for the consequences of following the courses of action they advocated.[12]

Ridgway's successor General Maxwell D. Taylor, while also critical of the merits of massive retaliation, was initially more amenable to such change. In addition, while he halted the Ridgway studies, another study completed by the Army War College in December 1955 proposed a completely air transportable 8,600 man division, the precursor to the pentomic division.[13]

US Army Transformation—The Pentomic Division

The advent of tactical and strategic nuclear weapons meant that the traditional triangular divisions needed increased survivability and sustainability on the new battlefield. The new division had to be able to fight and defeat the enemy in both nuclear and conventional modes with a structure that could account for the worst-case scenario. It also had to minimize the effects of the other side's nuclear capability.[14]

The new division fulfilled the operational imperatives linked to survivability through dispersal, flexibility, mobility and firepower.[15] Survivability meant that the division had to be able to disperse both laterally and in depth to avoid destruction. Flexibility was tied to the ability of the division to concentrate, strike and disperse. Mobility was a key operational requirement because forces needed to concentrate rapidly, exploit atomic fires and disperse to offset the possibility of offering a target worthy of nuclear engagement. Conceptually, this division solved the policy issue since it addressed the American and NATO preoccupation with numerical inferiority in Europe by providing both a deterrent and an economy of force effect.



U.S. Pentomic Infantry Division of the 1950s.

Atomic testing in the Nevada desert during the 1950's.

Photo courtesy of Oregon State University

The new division as outlined by Taylor in October 1956 was called the pentomic division as it included five self-sustainable battle groups with five companies of five platoons. The battle groups were smaller than a regiment but larger than a battalion. Each battle group had a headquarters and service company and its own heavy mortar battery.[16] This division came in three types: airborne, infantry and armoured. In terms of strength, the infantry division was reduced from 17,700 soldiers to about 14,000 with most of the reduction coming from the elimination of the battalion command level.[17] However, attempts to increase mobility, by having more helicopters for the airborne divisions for example, were not sufficient to achieve that objective. Firepower was provided by mortar, artillery (105 and 155 mm) and by Honest John nuclear rockets.[18]

Since nuclear weapons would blast through the enemy front, there was no need to manoeuvre but simply to exploit by attacking in column using rapid movement. In the defensive mode, the units would apply area defence or islands of resistance fighting independent battles.[19] In fact, the pentomic division was relying on firepower as its main attribute. The great leap in nuclear firepower was not supported by adequate mobility, which negated the possibility of any true manoeuvring. The logistic support was inadequate since it was supposed to be provided by a large support base outside the division.[20] The communications equipment did not provide for the necessary command and control for dispersed operations. Psychologically, the individual soldier was now operating in relatively small unit actions with limited means of communicating and presumably with a rational fear of the true capabilities of nuclear weapons. It was felt that conditioning during training and increased reliance on small unit leaders would be required.[21]

Since nuclear weapons would blast through the enemy front, there was no need to manoeuvre but simply to exploit by attacking in column using rapid movement

In the hope of securing its share of the budget allocations and to put to good use the firepower at its disposal, the Army developed a niche related to rockets and guided missiles. This would serve to showcase Army proficiency in the area of space exploration. It would also demonstrate Army attentiveness to the development of long-range attack missiles and air defence against enemy bombers carrying nuclear bombs. Sustained opposition elsewhere in the Defence Department and from the Air Force nevertheless ensured that despite the successes of the Army programs, the Air Force eventually obtained permission to field the Intermediate Range Ballistic Missile (IRBM) while the Army kept the ground-based Air Defence role.[22]

The application of the new concepts and the delineation between the Army's Air Defence and the Air Force IRBM roles resulted in a significant reduction in the Army's strength from 1.6 million in 1952 to 889 thousand by 1959 and its budget shrank from $17.5 million to $9.53 million. The Air Force's budget went from $15.1 million to $19.3 million during the same period.[23] To be fair, one must also take into account the perceived Soviet threat emanating form manned bombers and missiles to fully explain the increased Air force budget.

The pentomic division was never tested in combat. Its smaller size never achieved strategic mobility because the Eisenhower administration emphasized nuclear deterrence as opposed to flexibility. The administration was unwilling to build airlift at the expense of the Strategic Air Command. Additionally, a lack of communications equipment and tactical mobility did not help. By 1961, the pentomic division had in effect been overtaken by events and the Army reverted to triangular divisions.[24] Technology had lagged behind doctrine, and strategic concepts had raced ahead of tactical realities.[25]

Strategic Context in the Post Cold War Era (1989-2002)

The fall of the Berlin Wall in November 1989 and the end of the Cold War ushered in a major change in the international context. It unshackled powerful dormant forces that pushed the international system to evolve into a multivalent and more amorphous entity. The advent of the third wave—the information age—as predicted by the Tofflers, was also coming into its own.[26] Whether we were and are witnessing deep power struggles sparking instability and often violent conflict between nations because of their different levels of development resulting from this advent is difficult to ascertain.[27]

While the White Paper of 1994 espoused the idea of multi-purpose combat-capable forces, it also directed a 32% reduction in the strength of its armed forces

The result has been an interconnected world and a global economy bent on outsourcing goods and services to cheaper-producing countries that depended on free trade for success. One of the corollaries was that countries with ready cash could now gain access to a wide spectrum of military capabilities.[28] The demise of the Soviet bloc also increased the risk of proliferation of weapons of mass destruction to rogue states or anarcho-terrorists.

Increasingly an expanding media reach worked to project humanitarian crises and their effects directly into our consciousness. Non-intervention could not be sustained in the face of the visual horrors of ethnic cleansing in the Balkans, the famine in Somalia, the genocide in Rwanda, the suffering in Haiti or the Taliban's desecrations/depredations in Afghanistan.[29]

Within the NATO alliance, such developments heralded intervention outside NATO's original area of operation. The organization went through a progressive enlargement in an effort to maintain relevancy, while trying to avoid antagonizing and isolating Russia. This was partly achieved by Russia's inclusion in the G8 in 1998, thus recognizing the country's special status.[30]

On the other hand, the United Nations proved unreliable throughout the decade.[31] As a conduit for international action, it remained dependent on the will of its stronger member states to intervene, with very mixed results.

In Canada, the government was intent on cashing in on a possible peace dividend by significantly reducing its armed forces. However, military reductions coupled with rising international instability increasingly strained the Canadian Forces' ability to cope with new conflicts. In all, the 1990s was a decade of profound change characterized by unpredictability, complexity and risk.

Background to Canadian Army Transformation

The Canadian Army was rather late in understanding the winds of change in the geopolitical landscape. First, it was dealing with a 1987 White Paper that was out of touch with reality. This created confusion. Except for airfield protection, the Army did not participate in the first Gulf War. However, it was involved in the Oka crisis in the fall of 1990 and in setting up four new Area commands in 1991 and 1992. Coincidentally, in the absence of a coherent defence policy, the closure of the bases in Germany sent a paradoxical signal of the government's intentions concerning international commitments. This was understandable because prosperity was being jeopardized by a huge accumulated governmental debt.[32] While the White Paper of 1994 espoused the idea of multi-purpose combat-capable forces, it also directed a 32% reduction in the strength of its armed forces. Additionally, it called for multilateral operations to be conducted anywhere in the world under UN or NATO auspices.[33]

Throughout the decade, the Army was involved in operations throughout the world, particularly in Cambodia, the Balkans, Haiti, Africa and in East Timor. Somalia was of particular significance to the Army as the latter struggled with the consequences of an incident resulting in the death of a Somali teenager at the hands of Canadian soldiers during an interrogation in Belen Huet in March 1993. The end-result was the disbandment of the Canadian Airborne Regiment two years later and discussions about a crisis in leadership. The 1990s also saw the introduction of business management practices and re-engineering efforts. Lastly, the Army implemented the Management Command and Control Restructure Team's main recommendation by moving its headquarters to Ottawa in 1996.

The professional military debates about the possibility of a Revolution in Military Affairs in the United States began to stir belated interest with senior Canadian officers. It was the subject of a concept paper that made key recommendations in May 1999.[34]

Attempts had been made between 1997 and early 2000 to conduct a fundamental review of its strategy. However, these efforts fell short of expectations. It took the appointment of LGen Mike Jeffery as Chief of Land Staff in the summer 2000 to launch a concerted effort at transformation by way of a new strategy. The "Army Strategic Refocus" was followed by five strategic planning sessions with broad participation from within the Army.

The study used Strategy 2020 as its fundamental start point. For the purpose of this study, three objectives under the over-arching multi-purpose combat capability stood out:

Modernization: field a viable and affordable force structure trained and equipped to generate advanced combat capabilities that target leading-edge doctrine and technologies relevant to the battle space of the 21st century;

Global deployability: enhance the combat preparedness, global deployability and sustainability of our forces; and

Interoperability: strengthen our military to military relationships with our principal allies, ensuring interoperable forces, doctrine and C4I (command, control, communications, computer, intelligence).[35]

Modernization was a given, although the qualifications of "viable" and "affordable" considerably limited the scope for renewal. Global deployability implied the acquisition of strategic lift capabilities that Canada could hardly afford short of a major conflict. The other option was reliance on allies. Interoperability confirmed Canada's continued emphasis on coalition and alliance operations. It also raised the issue of sovereignty—especially in relation to the United States. On the other hand, the Canadian Army, contrary to the other environmental commands, had minimal linkage and integration with its American counterparts.

All three objectives raised the inherent tension between the agendas related to sustaining the current Army and that related to actual change. It also raised concerns over the level of resources that could be invested in long-term capital plans as compared with those marked in support of Air Force and Navy transformation efforts. More fundamentally, other than the increased complexity of the world and the emergence of new global risks,[36] there seems to be no underlying conceptual basis for transformation. Furthermore, the Army strategy recognized the policy uncertainty caused by an announced Defence Policy Review that has yet to materialize.[37]

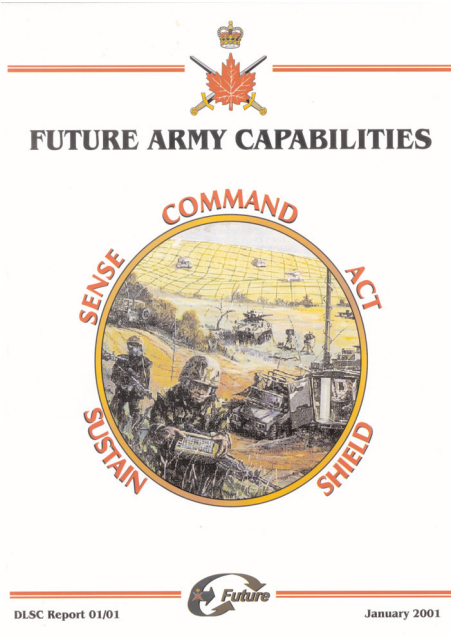
Canadian Army Transformation

Essentially, the new Canadian Army structure sought to increase its capability in the combat functions of "command," "sense" and "sustain" while reducing those of "act" and "shield."[38] For the function of "command," the new structure would organize the headquarters of the manoeuvre units—whether they were armoured, motorized or light infantry—in exactly the same configuration. The grouping of these capability sets could then go under brigades and brigade groups. However, one of the three brigade-group headquarters was more robust since it was used as the experimental test-bed for digitization.

The "sense" function would benefit by changing two of the three armoured regiments to reconnaissance regiments and by eventually developing an Intelligence, Surveillance, Target Acquisition and Reconnaissance capability. Presumably, this would reinforce our ability to conduct reconnaissance to achieve full knowledge of the enemy's whereabouts.

For the combat function of "act," the plan assumed considerable risk by transferring capabilities (pioneers and mortars) from the infantry to the engineers and the artillery respectively. The number of direct and indirect fire platforms would also be reduced. Once fielded, these systems would have improved precision and range. The plan sought to reduce mass by concentrating all heavy tracked vehicles (tanks, howitzers and heavy engineer vehicles) to units in Alberta albeit at a much lower readiness level.

The TOW under armour (but not the TOW systems themselves) would also move from the infantry battalions to a single infantry unit in the west. In effect, the Army was accepting asymmetry at both the unit and formation level. The units would be based on Tactically Self Sufficient Units that represented task-tailored capability packages.[39] The idea was that these "packages" or modules could plug and play into any higher formation whether Canadian or from another ally, presumably the United States.



Both the "shield" and "sustain" combat functions required that more work be done. "Shield" included force protection afforded by military engineers through their mobility, counter-mobility and general engineer tasks as well as air defence, electronic warfare, nuclear, biological and chemical defence and military police. "Sustain" sought to clarify the close and general support that needed to be provided firstly in the context of other Canadian Forces and Department of National Defence initiatives and secondly while improving the depth, flexibility and range of combat service support to the Army.

Finally, the Army implemented a three-year training and operation framework based on three phases of equal duration: reconstitution, training and employment. The units in the reconstitution phase would only conduct low-level training and have access to minimal numbers of combat vehicles. The units in the training phase would go through a complete training ramp-up and they would have access to the full complement of combat vehicles. The units in the employment phase would either be deployed or maintain their currency in anticipation of a potential deployment. A Canadian Manoeuvre Training Centre (CMTC) similar to the American National Training Centre in California will be created. Unfortunately, only four of the twelve battle groups will be able to train there on a yearly basis.[40] Because of the current resource difficulties, it was envisaged that an interim force model to bridge the next five years would be put in place. This model would be an intermediate step required to lay a firm foundation for the true transformation to occur from today's Army to the Army of Tomorrow in the year 2012.[41]

The next section of this essay will analyze and compare in more detail the similarities and the differences between the American and Canadian experiences in transformation. This will set the stage for articulating the pertinent findings that may have relevance to the ongoing Canadian Army implementation of its strategy.

Funding Issues

Eisenhower wanted to protect the American way of life and its economy. One of the main thrusts of his "New Look" policy was the reduction in defence spending. For this reason and because of competing demands from the Air Force, the pentomic division

was introduced with promises of new capabilities in communication, mobility and support that never materialized. Similarly, the end of the Cold War promised a peace dividend coupled with a significant slashing in defence outlays in order to cut the Canadian government's debt. As the situation improved throughout the 1990s, defence funding increased. However, demands still largely outweighed available resources.

As a result of limited funding, the transformed Canadian Army would actually field a smaller number of new platforms and/or systems. The systems were intended to have greater capability in terms of firepower, precision and overall effect. However, the number of systems may be so small as to create inverse impacts based on their scarcity. The commitment of these high-value assets could affect the commander's willingness to send them into battle since the loss of one or two systems may represent a disproportionate loss of combat power. There must be a better understanding of the balance between limited numbers of high-end systems versus more but less-capable ones. Can Canada still contribute in a significant way to a coalition with less-capable systems on a fairly high-intensity conventional battlefield? That is the question.

As a result of limited funding, the transformed Canadian Army would actually field a smaller number of new platforms and/or systems

Contrary to its American counterpart of the 1950s, today's Canadian Army has been timid in bringing to bear the necessary resources for the successful implementation of its strategy. As an example, the CMTC still requires extensive investments to get up and running. We must also clearly understand the impact of fielding systems that tend to be at the lower end of the medium-weight scale. In many respects, this timidity could be counter-productive by setting up the Army and by extension the Canadian Forces for failure.

Technology

The proliferation of atomic weapons, the advent of thermonuclear weapons and the new means of delivery put renewed emphasis on technology during the 1950s. Today, technology based on information promises the ability to strike and destroy with precision, raising the profile of technology as a panacea to counter friction and to lift the fog of war.[42]

The effects of the American propensity to focus on technology should be observed and noted carefully by Canada's Army. As Colonel Snyder warned, the United States Army during the 1950s allowed its pursuit of technology to drive the development of doctrine and organizations rather than first developing operational concepts to direct the pursuit of appropriate technologies.[43] The complexity and confusion created by war could, in the author's opinion, never be mastered even with supposedly omnipotent weapons and unblinking intelligence. Information dominance may provide a clearer picture of the situation on the ground, but it is unlikely to be able to predict the future nor determine the intent of an opponent.

Flexibility

The pentomic division had strategic mobility because it was air-transportable. These divisions could punch through enemy lines by the use of tactical nuclear firepower

without the necessity to actually manoeuvre on the battlefield. They had to be flexible and had to possess the ability to concentrate, strike and disperse so as to survive on a nuclear battlefield. However, pentomic division structures ensured that such divisions could not to be truly useful against a non-nuclear enemy. Indeed, their character worked to increase the likelihood that any such use would quickly escalate into a nuclear exchange.

The Canadian Army requires new capabilities that have yet to be fielded. With precision fire and near-perfect intelligence, it could attack and destroy the enemy's critical centres of gravity. Its use of "Tactical Self Supporting Units" and plug-and-play capability mean that it could also concentrate, strike and disperse at will. By using an eight-wheeled, lightly armoured common chassis rather than the heavier tracks for its combat vehicles, the Canadian Army has enhanced its deployability. However, the sustainability of any deployed force as well as the availability of limited lift assets to deliver even this leaner Army remain a source of concern.

The turmoil and dislocation created by changes in the internal structures of Canadian battalions and regiments, in effect within the core of the fighting elements, cannot be understated. Granted, the changes are part of the risk taken to provide the internal flexibility for the Army to transform. However, once a capability is lost or reduced, it is very difficult to regain. The battalions and regiments have proven their worth in battles. The new structures have yet to be tested in combat situations.

On the other hand, the Canadian Army proposal recognizes the nature of complex terrain and the presence of both conventional and unconventional enemies. It accepts the full spectrum of conflict throughout the continuum of operations ranging from search and rescue to humanitarian relief to peace support operations to collective defence. The proposal is premised on the necessity of a cultural shift based on formal professional education as well as a full-fledged lessons-learned process based on operations, our allies' combat experiences, experimentation, simulation and exercises. Furthermore, it can count on a soldier that has proven time and again to be mentally agile and highly professional when faced with complex situations.

Training and Experimentation

The training carried out during the 1950s permitted a tiered readiness within the United States Army whereby some divisions were at a higher manning level than others. This created a sense of "haves" and "have nots" that was detrimental to the Army as a whole.[44] The current Canadian construct, with the creation of the CMTC, will take three years to train the Army's twelve battalion groups. Will the Canadian Army be able to create a synergistic training effect over such a long cycle without creating a sense of "haves" and "have nots"? With the current personnel disruption within units, the unforeseen operational deployments and the injection of new priorities from other quarters, it is difficult to ascertain whether the cycle is workable or not. This also has an impact on command positions. The Canadian Army has been unable to offer three year tours for their Commanding Officers and gives two year tours at the company/squadron/battery and platoon/troop levels only with great difficulty. The mismatch between the training cycle and command tour lengths will create officers without hands-on battle-group experience.

The US Army used experimentation and demonstrations to prove the validity of the pentomic division. In fact, these tests were closely controlled demonstrations to convince outsiders of their usefulness rather than to evaluate doctrine and equipment. In the context of the Canadian Army, we are still striving to put in place an interim model. Except for the digitization of command and control in one brigade-group headquarters, true experimentation in the field has not occurred because the Canadian Army cannot afford to transform only part of its force for testing while keeping its ability to meet other commitments extant.

Cultural Issues

Canadian transformation is very much influenced by current American efforts. The Canadian Forces and all three of its environments have shamelessly borrowed American doctrine and terminology despite subtle cultural differences, variances in scope and diverging technologies. The Americans failed in their transformation effort in the 1950s and early 1960s because their pentomic divisions were ill-suited for the most prevalent conflicts of that era—counter-insurgencies and wars of liberation from colonial powers. There is no guarantee they will not fail again. In that sense, the Canadian Army must be prudent in maintaining its unique approach to warfare.

As the Canadian Army progresses to the "Army of Tomorrow," it must continue to challenge the assumptions upon which its strategy is based. As an example, although the process underpinning the transformation effort was completed prior to the 11 September 2001 attacks against the United States, LGen Jeffery admitted that we need to invest time and effort in understanding those issues.[45] In the rush to implement the strategy (and we do need to move forward quickly), we must constantly challenge assumptions. In that regard, the Army has recently established a four-part capability development process and it has challenged Army Generals within the Land Staff to get personally involved.[46] Their continued involvement will be a key to its eventual success.

As we have seen, there were serious disagreements between the United States Army leadership and the American Administration over the Army's strategy of massive retaliation that impacted significantly on the advent of the pentomic division. For the Canadian Army, the new structure was developed in the absence of a Defence Policy Review and guided by generalities falling out of Strategy 2020. More importantly, it was admitted in Army circles that the Army did not receive complete support from the most senior Canadian Forces leadership although John McCallum, Minister of National Defence in 2002 and 2003, supported the process.[47]

Within the new paradigm, the Army must seek a leadership role in the area of joint operability. What Army systems are relevant to the joint capabilities of the Canadian Forces? Are there systems that are useful for both the Army and the Navy or the Air Force? Where overlaps exist, the Canadian Forces must support the effort. If not, it may have no choice but to find a more specialized niche to remain relevant.

Findings

The study of the American transformation of the 1950s as compared to the current Canadian Army process provides a better understanding of the obstacles and the challenges that need to be met in facing the latter's current demands for

transformation. Specifically, we have seen the importance for Canada of developing its own doctrine to take into account our cultural biases and our unique way of war. This will be enhanced by resisting quick-fix technological answers and by continuing to invest in our Army's own brain-trust. We should review the number of systems to be fielded in order to provide a potent force for Canada and for our allies. If we cannot, we should balance very carefully the requirements of quality versus quantity.

The Canadian Army must be very wary of transferring capabilities between its combat arms to generate the necessary interim model positions. As suggested earlier, if the Canadian Forces agree with the transformation process, the Army should be supported by generating these positions from the CF's overall structure and not only from Army positions. Maximum use of experimentation needs to be carried out to confirm the validity of the new structures as implementation progresses. In this regard, the new capability development process should continue to be nurtured and vigorously applied as it injects important feedback in the iterative process of transformation. We require a flexible training framework that can accommodate inevitable changes in tasks and priorities. Ideally, the CMTC should train six battle groups yearly to provide command hands-on experience right up to the battle-group level. Finally, joint capabilities must be fast-tracked and harmonized with Army transformation as well as with the other environments' own efforts in this regard. Overlaps between the environments must be seen as opportunities for exploitation for the benefit of the Canadian Forces as a whole. In this regard, a top-down process is required.

The Canadian Army must be very wary of transferring capabilities between its combat arms to generate the necessary interim model positions

Conclusion

After reviewing in detail the particular contexts of the 1950s and the 1990s transformations, it has become clear that there are similarities that warranted a closer look at the conditions that have contributed to the demise of the pentomic divisions. An examination of the Canadian context and a review of the structure and systems that will be fielded for the Interim Model and the "Army of Tomorrow" have provided insights that should be heeded if we are to maintain the transformation of the Army firmly on its tracks.

Funding, technology, flexibility, training and experimentation and cultural issues all had a role to play in both transformation efforts. They should be reviewed for further consideration. Furthermore, as alluded to earlier, the integration of transformation at Navy, Army, Air Force and Canadian Forces levels should be harmonized and synchronized to draw a roadmap for change that is affordable, realistic and that will add value for Canada as a nation. Canada wants to be relevant. It can only achieve this if its forces are strategically relevant to fulfill their part within the overall mandate.

Multi-purpose forces can work in a combined, joint and inter-agency mode. They can also succeed in conventional wars and against an unconventional enemy even in complex terrain. In that sense, the Canadian Army strategy is aiming in the right direction and it probably only requires a change in scope combined with some adjustments to succeed. LGen Jeffery stated that we won't get the future right. He further added that our objective must be to avoid getting it seriously wrong.[48] I assert

that the future is now and that Canada, the Canadian Forces and the Canadian Army have no choice but to get it right.

About the Author...

Colonel Denis Brazeau enrolled in the CF in August 1975 and graduated from the Royal Military College in May 1980 with a Bachelors degree in History. He was commissioned as an infantry officer and served successively in 1st Battalion, Royal 22e Regiment in Lahr, Germany, and then later with 2nd and 3rd Battalion. Colonel Brazeau held a number of subsequent posts across the Army, including command of the Royal 22e Regiment Battle School until his nomination as Chief of Staff and then Deputy Commander of 5e Groupe de Soutien du Secteur du Québec de la Force Terrestre in May 1998. In July 2000, he served in the Democratic Republic of Congo as Deputy Chief of Staff Operations and Plans with the United Nations. In September 2001, he deployed again and took command of Task Force Bosnia-Herzegovina. Colonel Brazeau is a graduate of the Canadian Land Force Command and Staff College Course in Kingston, the AMSC/NSSC at CFC Toronto, and the United States Army Command and General Staff College at Fort Leavenworth, Kansas. He also holds an MA in War Studies from the Royal Military College of Canada.

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38. Definitions are in order to understand what is meant by these combat functions. "Command" relates to headquarters, signal, intelligence, surveillance, target acquisition and reconnaissance. "Sense" relates to reconnaissance, electronic warfare and target acquisition. Note the overlaps between these two functions. "Act" means the manoeuvre and firepower provided by the infantry, the armour and the field artillery. "Shield" relates to combat engineers, pioneers, air defence and military police. Finally, "sustain" is the support provided by the service battalions and the field ambulances.
39. *Advancing with Purpose: The Army Strategy*., 20.
40. The issue of the affordability of training more than four battle groups on a yearly basis was raised on several occasions during Army-level meetings in 2003 and 2004.
41. *Advancing with Purpose: The Army Strategy*, 9.
42. I have used the expression "lifting the fog of war" from Admiral Owen's book of the same title. There is a good account of Admiral Owen's role in pursuing RMA within the United States in the essay *Transformation of the Canadian Forces: Is Aerospace Power Relevant?*, an NSSC5 paper written by J.L. Christian Carrier in June 2003.
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44. Snyder, 10.
45. *Towards the Brave New World: Canada's Army in the 21st Century*. (Kingston, Ont.: Director of Land Strategic Concepts, 2003), viii.
46. Ibid., 123. The four part capability development process are: conceive, design, build and manage.
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TIME FOR CONSIDERATION: ONE COMBAT ARMS CLASSIFICATION

Lieutenant-Colonel Shane Brennan, CD

There is no more delicate matter to take in hand, more dangerous to conduct, or more doubtful of success, than to take the lead in the introduction of a new order of things.

Machiavelli

Change is never easy; it never has been. However, it is time to consider one. Instead of training separate infantry, armoured, artillery and engineer officers, should the Canadian Army not just create one combat arms classification? The generalist combat arms officer would be trained from enrolment on combined arms tactics and leadership. He or she would plan and conduct operations that fully harness direct and indirect effects, close assault, mobility and counter mobility forces. This generalist combat arms officer would be an expert at applying combat power, and would gain the skills to integrate broader aspects of warfare related to information and effects based operations.[1]

The case for change will be argued by examining three questions:

- Why did armies develop combat arms corps in the first place?
- Why is there a need for a fundamental union of combat leadership?
- How would one employ these unified combat officers?

In exploring these questions, a thumbnail sketch of the origins of army organizations and the roots of combined arms theory will be examined. In addition, some significant trends in force design and employment will be drawn from ongoing transformation efforts. A fundamental union of combat arms officers will be examined in relation to the cumulative effects of combined arms integration, joint operations, potential new divisions of responsibilities between officers and senior non-commissioned officers (NCOs), emerging doctrinal concepts, and the Canadian Army's transformation efforts.[2] Finally, some initial thoughts on combat officer employment will be offered.

Why did armies develop combat arms corps in the first place?

To appreciate why armies have developed combat arms corps, it is necessary to briefly examine combined arms history and theory. One could start at any period and note the development of the various combat arms corps. The famous Battle of Hastings in 1066 provides an example.[3] One major difference between Harold's English army and William's Norman force was that the former fought on foot while the latter possessed a mix of foot soldiers and cavalry (knights on horses). The shock effect provided by cavalry was one of the decisive elements in the Norman victory. The cavalry possessed superior mobility, hitting power and protection over Harold's foot soldier. Although it was not the first use of cavalry by any stretch, the conquest illustrates a step in combat arms evolution.

Brennan, Lieutenant-Colonel Shane, 'Time for Consideration: One Combat Arms Classification' Canadian Army Journal Vol. 8.2 (Summer 2005), 52-65.

Warfare is in a process of continual change. The range, precision and lethality of weapons, the manner and speed of manoeuvre, the level of protection, the capability of communication or information technologies have all evolved and continue to evolve. There are a large number of influences that affect army evolution. Technology tends to be the most obvious, but new political, social and economic orders, as well as innovative organizational and doctrinal development also drive change. For instance, Roman legions long dominated the ancient world because of their effective training and organizational groupings not because they enjoyed any weapon superiority.[4] Similarly, it could be argued that success of the German Blitzkrieg in the initial stages of World War II was not the result of superior weapons technology, but better training, doctrine and employment of weapons.[5]

The French Revolution created the political and social change that enabled mass citizen armies. Coupled with Napoleon's superior tactics and a new organizational structure, the levée en mass provided yet another critical development in the conduct of warfare.[6] The result was large armies organized into independent tactical groupings of infantry, cavalry and artillery. The influence of Napoleon's armies and their dramatic success was far reaching. Although, combined arms tactics had evolved prior to Napoleon's era, it was arguably his success that remains the primary influence and the basis for most of "Western" armies organizational structure and tactics.[7] For example, each combat arm had a role or combat function to fulfill on the battlefield. Light cavalry's function was initially to find and fix an opponent. Heavy cavalry would then be used to charge into enemy infantry formations to break them up. The infantry tactic for resisting an assault was to form squares for all round protection. Accordingly, Napoleon would use either artillery fire or infantry small arms fire to break these defensive formations. Thus, the combat arms became interdependent on each other because, when they were effectively integrated and employed, they were decisive in combat.[8]

The French Revolution created the political and social change that enabled mass citizen armies

Integration was the key concept. By keeping the combat arms together in division organizations, they were immediately ready for battle and could compensate for specific arms vulnerabilities. This French system designed by Lazare Nicolas Carnot and used by Napoleon was the forerunner to the contemporary "Western" army division structure.[9] Self-sufficient by design, the system gave divisional commanders the critical ability for independent operations. Today armies continue to group combat arms for precisely the same reasons and at increasingly—lower levels.

Combined arms theory relies on complementary forces. Each combat arm has weaknesses that can be compensated by the strengths of another. Infantry's vulnerability can be offset by the protection provided by armoured (tank) forces, obstacles emplaced by engineers and the long range effects of indirect fire artillery systems. Conversely, the infantry can go where tanks cannot go. Infantry provides close battle ability and is capable of a multitude of tasks. Balancing a force with a mixture of capabilities to deal with varying combat conditions increases its adaptability and robustness. Quite simply, the sum of the parts becomes greater than their individual whole.[10]

Combined arms tactics will endure as long as the combat arms are complementary, effectively coordinated and relevant to the conditions of combat. From battles of World War II to those of Iraq in 2003, the value of combined arms teams has not diminished. In combat, if one is required to advance under fire and defeat an enemy, direct and indirect effects, protection, mobility and close combat forces are required, in addition to a multitude of command, information and sustainment capabilities. The requisites for successful tactical land battle remain rooted in the coordinated use of a balanced, well trained and led combined arms force.

However, the notion of what constitutes a balanced combined arms force is changing. Armies developed combat arms corps to fulfill functions required on the battlefield. But there is evidence not only that these different functions are becoming blurred, but also that integration between combat arms organizations will eventually become permanent. These changes will likely affect future combat arms leadership and structures. It is not that a particular combat function is no longer required; but rather that technology, superior soldier skills (the ability to perform numerous functions), doctrine and new organizational groupings are permitting combat functions to be provided in new ways.

By keeping the combat arms together in division organizations, they were immediately ready for battle and could compensate for specific arms vulnerabilities

There are many factors enabling this change. Improved levels of training, education and professional development of soldiers and officers better prepare them for the challenge of combat. Increased commonality in weapons and communication systems is growing, as is the integration of many former discrete systems into more combined ones. These factors point to new ways of accomplishing old tasks.

For example, consider the United States Army's transformation efforts.[11] It has created the Stryker Brigade Combat Team (SBCT), a medium weight force that is designed to be lethal, survivable and rapidly deployable. Crafted specifically to conduct dominant manoeuvre in future joint operations, SBCT represents a significant change in combat arms structures. SBCT foreshadows the path that will see increasingly integrated combat functions within unit structures.[12] The SBCT has a headquarters company, a signals company, an intelligence company, an engineer company, three infantry battalions, a reconnaissance, surveillance and target acquisition squadron, an anti-tank company, a field artillery battalion and a support battalion. Conspicuously absent, however, is a dedicated tank (armoured) unit. Instead, the direct fire capability has been incorporated directly into the infantry battalions. Each infantry battalion has, in essence, three combined arms companies consisting of three infantry platoons, a mobile gun platoon, a sniper section, a mortar section and a forward observation section. In addition, the battalion has a scout and mortar platoon. The SBCT is further harmonized by the use of the Future Combat Systems (FCS) family of common fighting sensors and platforms.[13]

The significance of this construct is two fold. Driven by pressures to synchronize combat forces, the United States Army created infantry units composed with organic direct, indirect and close assault forces. While most “Western” armies simply group such teams in temporary arrangements of infantry, armour, artillery and engineers, the

US has taken a practical step forward. Creating self-contained teams at the company level maximizes adaptability for independent tasks and operations. I assess that the creation of permanently integrated company teams will contribute to the general erosion of traditional corps roles. An organic structure that integrates combat functions will increasingly lay bare the notion that any one corps is inherently the master of a specific combat function. Indirect and direct fire, close assault and even mobility tasks simply do not require separate corps leaders or organizations to deliver combat effects. The tasks, although unique, are not so specialized that a separate officer leadership model is required to ensure their successful execution. Specialized tasks require specialized training not specialized leadership.

The second impact is the fundamental notion of jointness. The SBCT was designed to enable rapid integration into a joint task force to fulfill land combat requirements. Thus an increased interdependence and complementary relationship is fostered among

Regardless of classifications, all soldiers must be prepared to fight.

military services. America is not alone in the move toward greater jointness. The United Kingdom's 2003 Defence Review makes a similar point.[14] Increasingly joint and multinational operations are the long-term outlook. Australia has also indicated it will pursue a joint, integrated and more expeditionary force structure.[15] Canada's position is generally in concert with its major allies. However, due to current force structures and capabilities Canadian employment is limited to international combined (with armed forces of other countries as part of a multi-national coalition) operations. Given our allies' transformation efforts and Canada's desire for interoperability, it too will be under increasing pressure to move toward a more integrated multinational joint force capability.

This quick sweep of history, theory and transformation offers a glance at the roots and reasons behind the combined arms teams and indicates several significant trends. In summary, permanently integrated company teams conceived for independent land and joint task force operations will impact on Canada's army force design and employment. This will compel change in doctrine, equipment, organizations and ultimately military

leadership, culture, training, and education. One possible outcome could be the fundamental union of combat arms leadership.

Why is there a need for a fundamental union of combat leadership?

The case for a fundamental union of combat arms leadership is linked to significant trends in the areas of combat arms development, emerging doctrine, technological advances and Canada's specific army circumstance. Each area will be examined in turn, to demonstrate relevance to this proposal.

Combat arms development will be increasingly integrated and less specialized in nature. Convergence of combat arms will increase because combat power is best generated by the integration of capabilities into the basic combat structure: the company or sub-unit. Canada and other armies have long known the wisdom of combined arms groupings but have remained wedded to the maintainance of separate specialized combat arms units. Only for collective training and operations were they combined to become combat teams. The logic of this division will likely crumble over time. Soldiers know that cohesion is founded in discipline, teamwork, demanding training and a sense of comradeship. Sub-unit cohesion is best developed through enduring shared experience—that is, in a permanent structure.

What were once the specialities of a specific corps are now simply combat roles to be conducted within permanently organized structures. It would be foolish to ask which is more important: direct fire, indirect fire, close assault or mobility? There is no clear answer because until these roles are integrated, they are only individual pieces of what is required for combat. Specialization has its place, but not at the expense of integration, which is the heart of combined arms operations. The rationale that requires a combat arms officer structure based on training an officer for one specialized function should be called into question. Is the specialist still effective and relevant? Do specialist officers supply the long-term combat mindset necessary for future combat success?

Combat arms development will be increasingly integrated and less specialized in nature

In considering combat effectiveness, one must be reminded of a “truth”. Young officers, by virtue of their commission and the special powers it grants, command platoons/troops but senior non-commissioned officers (NCOs) who have more experience and expertise, provide the glue and practical know-how necessary for its successful employment. Senior NCOs are often referred to as the backbone of the army, and for good reason. These soldiers have the maturity, competence and knowledge required in their specific combat roles. Because they have long worked at the front lines, they understand the demands and have mastered the skills required. Indeed, their relationship with young officers is likely the most influential mark on developing junior officers. Who conducts the bulk of basic officer instruction? It is the senior NCOs.

The Army should harness the expertise of the senior NCOs by expanding their responsibilities in the execution of tactical tasks. Are current combat officers' roles more linked to *what we were* than *what we will become*? The reason why a

commissioned officer is required to call for fire, control a command post, plan and supervise obstacle construction is a throwback to older cultural class divisions. This requirement no longer fits the reality of Canadian society. Senior NCOs want and should have more responsibility. Officers should focus on wider issues related to commanding and coordinating tactical operations rather than the mechanics of tactical tasks.[16] The army should continue to increase the responsibilities of this critical level of leadership and exploit its full potential in executing specific combat arms tasks. This change would contribute to combat efficiency because it would reinforce traditional tactical leadership success based on competent senior NCOs leadership while developing a combat officer tied less to specialized detail and more to the integration of combat power.

Are we confusing technical skills and leadership? Consider the information and computing field. Daily, we trust junior personnel and a few NCOs to keep the system running. A leader does not need to be technically proficient with a system to harness it. The analogy of an orchestra conductor who knows how to integrate the whole rather than how to play each instrument is apt. An officer primarily requires the ability to plan, organize, lead, command and control vice the ability to be a technical expert in any one task or specific combat function. Granted, there will always be a requirement for a certain amount of officer specialization to fulfill some tasks and develop and assess ongoing technological evolution but its magnitude must be carefully assessed.

In simple terms, how one is led and organized creates a predisposition towards outcomes

A second reason for a fundamental union of combat arms officers is cultural. Current combat arms leadership remains an impediment to change because of the parochial view linked to specialized corps. There comes a time for a new mindset. The past should be preserved in museums and history books, not in military leadership structure. Without a fundamental change in the leadership culture that embraces, from its conception, combined arms doctrine and ultimately joint operations, we are struggling within a confined space in a creative closed box. Simply put, it would be better to commence leadership training with an integrated combined arms focus rather than corps based specialized training. This would foster a new culture for Canadian combat leaders—a culture imbued with a broad understanding of the complexity of combat and an appreciation for the integration it requires.

Presently the Canadian Army is a collection of corps based "tribes". Regimental and corps affiliations have provided the cohesion and have been the bedrock upon which individual and collective skills have developed. They have provided a sense of belonging for soldier and leader alike and have been very successful in conflict. But are they still useful?

Officer culture nurtured within corps/regiments forms the basis of life-long views. Such values tend to create a phenomenon referred to as "path dependency" wherein the decisions to retain or remove an idea or organization can have a profound effect on long-term outcomes.[17] In simple terms, how one is led and organized creates a predisposition towards outcomes. Current Canadian Army officers tend to perpetuate

their own organizations or corps. This is understandable, but it also points to the need for deeper integration of combat arms culture versus corps culture. One way to develop this culture within the leadership is to foster and train officers in new ways. Adoption of a leadership paradigm that develops a deeper understanding of the combat arms whole, as opposed to fostering distinct players, should be an army aim. Indeed, the current officer training system after the platoon command level generally fosters developing combined arms skill through courses and training. Why delay this process?

Another dynamic that points to a fundamental union in combat arms leadership is emerging information and effects doctrine. Over time it is likely that the concepts of Network-Centric Warfare (NCW) and effects based operations (EBO) will drive significant doctrinal change.[18]

NCW was founded on the centrality of information and its potential as a source of power.[19] Specifically NCW is about developing combat power from effective linking or networking of geographically dispersed combat forces that are knowledgeable due to an ability to share information and convert it into useful battlespace knowledge. It is not about technology, but about the potential of dramatically improving awareness. Sensors, individuals, platforms, units and all sources of information could contribute to understanding the battlespace and, more importantly, to identifying, targeting and delivering effects against adversaries. NCW is seen as the means to an end that is EBO.

Instead of narrowly specializing on combat functions in what were once infantry, armoured, artillery and engineers tasks, officers will soon focus on orchestrating the effects of direct fire, indirect fire, close assault forces and mobility/counter mobility forces in not only the physical domain but also in information and cognitive domains

EBO are defined as coordinated sets of actions directed at shaping the behaviour of friends, foes and neutrals in peace, crisis and war.[20] The EBO concept envisions a more coordinated approach to the actions that create effects, not just to adversaries but to all. It is more akin to action targeting human behaviour through a variety of means not just by physical assault on an adversary. The outcome required is an orchestrated set of effects that achieves what we desire.

NCW and EBO will fundamentally change how armies assess, plan and conduct operations. Simply put, dramatically improved information/communications networking, sensor and precision weapon technology promise radically new levels of what militaries have always sought in warfare: better information and communication, leading to faster decision cycles and the ability to use more precise and lethal weapons. Combat planners using effects based doctrine will have a new approach to missions.

> No longer are the missions we are called upon to participate in purely or even predominantly military. The effects sought in many missions require a balance of military and non-military means to achieve. But despite this reality, the former tight coupling between means and effects continues to permeate mindsets, processes and measures. EBO serve to remind us that means and effects need to be explicitly linked, that traditional means may not be appropriate, and that we need to once again broaden our view of military

> operations…to go beyond kinetic means to consider means in the information and cognitive domains across the full mission spectrum in peacetime and crisis response as well as in combat.[21]

Instead of narrowly specializing on combat functions in what were once infantry, armoured, artillery and engineers tasks, officers will soon focus on orchestrating the effects of direct fire, indirect fire, close assault forces and mobility/counter mobility forces in not only the physical domain but also in information and cognitive domains. A broader focus for the combat officer and a greater reliance on senior NCOs to conduct the minute-to-minute tactical tasks are possible outcomes. While these doctrinal concepts are neither mature nor realized in practical terms, their influence will progressively grow.

Technology is advancing at an unprecedented rate and will be a significant influence on combat arms convergence. Although technology does not change the nature of war, history has shown it does change the conduct of war. A recent army report asserted that, "the last decade of the 20th century witnessed more technological progress than

The workhorse of The Canadian Army.

during all of the preceding 90 years."[22] The military results are obvious. From soldier systems, precision weapons, intelligence, surveillance, target acquisition and reconnaissance systems (ISTAR) to command and controls systems, considerable progress is underway. While the article will not dwell on specific technologies, it is sufficient to note the undeniable trend that sees more capable systems that blur former distinct combat roles. Corps relevance will likely decrease as technology and human capability increasingly permit combat arms integration.

Army leadership will be challenged to make the best use of technology. If the army attempts to pigeonhole technology into existing organizations using the same leadership model, it is liable to miss new opportunities. Instead, what is required is a fundamental assessment that aims for a holistic approach. Specialization in roles will have less to do with corps based realities than what is required in companies and units for combat. The essence of combat power is more about the integration achieved

through coordination and less about specialization achieved through detailed task execution.

Today, the Canadian Army should reflect not on the individual roles corps played in the past but on how it might best coordinate and integrate the capabilities of our present army. Given current structures, Canada graduates approximately 150 regular force combat arms officers a year.[23] While there are many more important factors to be considered, in the end, the small numbers put the scale of transition in perspective.

Currently, the Army is undergoing transformation in order to become a strategically relevant, tactically decisive, medium weight force.[24] The majority of our combat arms are now Light Armoured Vehicle (LAV) based or in the process of LAV transition.[25] With the exception of three light infantry battalions and some engineer and artillery systems, the regular force will become increasingly uniform in fighting vehicle platforms. Anti-armour and air defence systems are also planned for LAV variants. In short, with some exceptions, the Canadian Army has never been closer to a common fighting platform and it is committed to having more common systems.

Frankly, an officer who graduates from any of the corps schools is one who has been exposed primarily to theory, tested in limited tasks and who has shown desire, intellect, potential and some technical capability

Coupled with the move toward common systems is an ongoing change in the composition of infantry and armour units. Recently, infantry mortar and pioneer platoons were eliminated. As well, the infantry anti-armour platoons are being moved to the armoured regiments. The armour corps is in transition away from traditional tank direct fire, and is now focussing on surveillance, reconnaissance and direct fire roles from mobile gun systems. Artillery and combat engineers have remained relatively unchanged but they too will reassess combat requirements.

Today, the Army's small size, increasingly uniform systems and ongoing transformation efforts all create certain synergies. While in the process of examining the rationale behind unit organization and potential future combat development, Canada should consider its leadership constructs. Do they shape the army for future success? Will corps trained officers be able to look beyond their corps bias to see ways of improving doctrine, organizations, equipment, training and education?

A recent development in the Directorate of Army Doctrine may improve the outlook. Canada has adopted five operational functions (Command, Sense, Shield, Act and Sustain) versus six combat functions (command, information operations, manoeuvre, firepower, protection and sustainment) to permit a broader look at doctrinal development.[26] These were conceived in an effort to break down barriers of specialization perpetuated by corps, allow better integration and provide a new order from which to consider combat development. It remains to be seen if this development can sway Army leadership away from corps paths and move them toward more comprehensive ones.

In sum, the case for a fundamental union has not yet crystallised, but, there are significant trends that point increasingly to a need for careful analysis of how combat arms officers are trained and educated. The growing pull toward integration,

potentially amplified senior NCOs' responsibilities, emerging NCW and EBO doctrine, technological advances and Canada's transformation efforts all imply significant changes that will increasingly call into question the wisdom of training specialist corps officers. Without a fundamental change in our leadership construct, we are likely to continue on the path of maintaining a corps culture that perpetuates fragmentation and specialization to the detriment of the integrated whole. Now is the time to turn to question of the potential employment of a unified combat officer.

How would one employ these unified combat officers?

To frame the discussion of officer employment one needs to consider today's realities. The Canadian Army has it backwards. It initially trains officers as specialists, when it really needs combat generalists. In the long run, it is not so much a competent platoon/troop commander the army desires as a competent sub-unit commander, solid second-in command or skilled key staff officers.

Frankly, an officer who graduates from any of the corps schools is one who has been exposed primarily to theory, tested in limited tasks and who has shown desire, intellect, potential and some technical capability. Most combat arms officers could succeed in any of the combat arms classifications given intellect, a motivated attitude, a willingness to learn, physical robustness and the desire to lead combat soldiers. The officer will learn more by training and through experience over time.

Soldiers preparing for a mission in Afghanistan

The point is that the specialist training that an officer has received in corps phase training, although valuable, is not as critical as many may assert. Few officers would have difficulty in mastering a technical combat skill after they had been properly instructed, permitted to practice and given the opportunity to improve. And training under demanding conditions hones their skills and build cohesion. However, what is hard to develop is the ability to look beyond specialized roles and to grasp the larger whole. By focusing our junior officers on a discrete set of combat skills we encourage a path that narrows outlook rather than widening it. This training may have sufficed in the industrial-age but will be found wanting in the information age.

Interestingly enough, we have already moved significantly toward the goal of achieving a new model combat officer. In 2002, the army embarked on common officer training to gain efficiencies by providing all officers with an initial exposure to army training. The stated aim of this training program is to provide the junior officer with the basic skills required to survive and fight on the battlefield.[27] Presently, upon completion of their army training, combat arms officers continue on separate paths to complete two phases of increasingly demanding specialized combat training at their respective corps school before unit assignment. In the future, a common final combat arms officer phase is needed to open new doors.

An employment model that provides a glimpse of what could be realized is needed to illustrate the case. Combat officers complete two final phases that teach small unit leadership, tactics, combined arms theory and familiarization training on the combat functions of direct and indirect fire, close assault, mobility and counter mobility tasks. Officers are then assigned to units on the basis of platoon/troop commander need. In their initial tour, they learn to command their platoon/troop and develop combat arms experience. After platoon/troop experience, a number are selected to receive additional specialized training at the combat training centre schools and will then go on to command specialized platoons or perform specialized roles. Others will serve in staff appointments within the unit. Eventually, junior officers will be assigned to staff positions outside of the units. Of course, officers will have developed unique skills based on where and what they have done and this experience will influence future employment options. The net effect is a combat officer corps with a broader mindset focused more on the integration of combat power.

The issue of how we train our future leaders needs careful consideration

This simplistic example leaves aside much detail; from training systems changes, career employment and progression paths to potential unit restructure issues. This appraoch would fundamentally affect officer, senior non-commissioned officer and soldier training. Organization, cultural and equipment change would be profound, as the effects of combat integration are more closely examined and developed. The complexities of such changes and their implementation are cause for caution but not reason for inaction. The challenge of change should be met by the long-term benefit and perhaps explored in an incremental manner with units or brigade. Perhaps the structures need to be changed before the leadership? The successful transition, in whatever form, must be based on sound logic and have as its aim the development of our greatest strength: our people.

In exploring the question of how to employ combat officers we are left with more questions than answers. In the end the question boils down to a simple reality. The company and unit commanders of 2020 are about to enter our training system. Is corps centric training imbuing the mindset that will continue to serve Canada's army well? Given the pace of technological and doctrinal change, the answer is “not likely”. The upshot is that Canada should consider leadership transformation concurrent with the re-structuring of units, the acquisition of new equipment and doctrinal development.

Conclusion

Change in any large institution is difficult and complex. The effect of a new combat leadership construct would be uncertain. What is certain is that the army must continue to evolve in incremental steps that permits growth, removes the obsolete and maintains immediate combat capability. Paradoxically, the present strength of the combat arms allows effective employment today but it also inhibits new growth. It is not the corps' fault, as they cannot help but be the product of their society, culture, experience, training and education. As history informs us, it is not uncommon to fail to grasp what could be, because of whom one is.

The issue of how we train our future leaders needs careful consideration. The question remains not *when* but what *will* cause the combat arms leadership to change? The cumulative effect of combat arms integration, potential new divisions between officer and senior NCOs' responsibilities, increasingly joint operations, the impact of NCW and EBO and Canada's army's present transformation all point to significantly changed circumstances that will increasingly call into question the wisdom of training combat specialist officers rather than combat officers. Although some issues involve long-term developments, there is a need to begin discussion in order to shape the army's collective wisdom and fully consider their leadership implications. The Army should welcome new thinking on this issue, because yesterday's solutions will not always answer tomorrow's challenges.

Canadian combat arms leadership maintains a narrow-minded view of combat, concerned more with corps or branch issues that not only hinder long-term combat development but also endanger their ability to grow and incorporate new ideas. Specifically, this tendency runs counter to a trend that sees the eventual integration of combat arms into one cohesive team, a process that began centuries ago and is still ongoing. If Canada's army cannot manage combined arms leadership integration for land combat operations, it will have difficulty realizing the higher standard of effective joint operations.

Machiavelli observed that nothing is more difficult than change but history has shown that nothing is more necessary, for the history of warfare is one of continuous adaptation. Combat arms evolution is inevitable. Canada is at a point at which it should consider a fundamental change in combat arms leadership, one that looks less to the past and specialization ands more to the future and integration. Such change will require vision and leadership-it is time to consider the notion.

About the author...

Lieutenant-Colonel Brennan graduated in 1983 from Carleton University with a Bachelor of Arts in Political Science and enrolled in the Canadian Forces. Upon completion of infantry officer training, he entered the Princess Patricia's Canadian Light Infantry. He has served in the 1 and 2 PPCLI, the Canadian Airborne Regiment, Headquarters 1 Canadian Mechanized Brigade Group and on Army staff. A graduate of the Canadian Land Forces Command and Staff College and Canadian Forces Command and Staff College, he has served from platoon commander to battalion commander in operations, and at variety of staff positions. He has recently completed the Masters of Arts in War Studies the Royal Military College and is currently the Chief of Staff at the Joint Operational Group Headquarters in Kingston.

Endnotes

1. Combat power is the total means of destructive and /or disruptive force that a military unit or formation can apply against an opponent at a given time. *Conduct of Land Operations—Operational Level Doctrine for the Canadian Army*, Canadian Army Publication B-GL-300-001/FP-000, 1998, p. 24.
2. The term joint connotes activities, operations, organizations, etc in which elements of more than one service of the same nation participate. Source: Canadian Forces/ NATO definition in Allied Administrative Publication-6 (AAP-6). http://www.nato.int/docu/stanag/aap006/en/2004-j-e.pdf (21 September 2004). Joint operations or jointness in general refers to the integration of land, sea and air forces in the planning and conduct of operations. Joint operations are a product of joint doctrine, training, and organizational structure, and are facilitated by interoperable command and control systems and complementary weapons suites. Canada, *Canada's Army*, B-GL-300-000/FP-000, p. 116-120.
3. Tom Wintringham describes the armies of Harold and William and explores the wide theme of continuous change in the conduct of warfare. Tom Wintrinham, *The Story of Weapons and Tactics from Troy to Stalingrad*, Boston, The Riverside Press Cambridge, 1943, p. 1-3. Successful warfighting relies on a process of continual concurrent development that simultaneously constructs and deconstructs forces and capabilities as they become less relevant.
4. Christopher Bellamy credits Roman training, employment of the short stabbing sword (technology) and doctrine as keys to success. Christopher Bellamy, *The Evolution of Modern Land Warfare*, Routledge, London, 1990, p. 30-31.
5. Robert Leonhart, *The Art of Maneuver*, Novato, Presidio Press, 1991, p. 48-52.
6. Bellamy noted that Napoleon did not introduce new doctrine or weapons but rather coordinated the use of artillery, infantry, and cavalry through the creation of the division structure and employed them effectively in accordance with a "Grand Tactics" strategy or what would be termed operational art today. Bellamy, *The Evolution of Modern Land Warfare*, p. 55-58.
7. It is likely the Swede Gustavus in the 1630s was the first to create what could be termed a European combined arms army composed of infantry with muskets and pikes, cavalry and artillery employed in a coordinated fashion. They were successful employed in battle but the Swedes never achieved the acclaim accorded to Napoleon's use of combined arms teams due to their limited strategic employment. Gunther Rothenbrg, Maurice of Nassau, Gustavus Adolphus, Raimonndo Montecuccoli, and the "Military Revolution" of the Seventeenth Century, in Peter Paret (editor), *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, Princeton University Press, Princeton, 1986, p. 48.
8. Robert Leonhart, *The Art of Maneuver*, Novato, Presidio Press, 1991, p. 44. Leonhart describes the development of combined arms tactics noting that technological developments enabled integration. Infantry was the still the dominant arm, but cavalry was employed for shock effect in attacks, and in reconnaissance and screening roles but was most successfully utilized in the pursuit. The artillery was successfully integrated because of its horse and wheeled mobility, allowing it to move with the infantry and cavalry in battle.
9. Ibid, p.42-44. Leonhart outlines the organizational significance of combining the three arms in set divisions.
10. Leonhart discusses the synergy and complimentary effect of combined arms theory and manoeuvre warfare, p. 91 110.
11. It is important to note that these efforts are part of a larger American service wide military transformation initiative that envisions an increasingly integrated and joint force approach to all planning and operations. American transformation is based on a Joint Response Force concept that envisions the requirement of a joint force to rapidly respond across a wide spectrum of contingencies. This jointness is the most powerful concept of transformation. The synergy that jointness brings is deemed essential and calls for increased integration and interdependence of service capabilities. The aim is to allow the joint force commander to operate within an adversary's decision cycle and apply force with greater precision, speed, and simultaneity throughout the battlespace. Paraphrased from *Transformation Study Report: Transforming Military Operational Capabilities*, prepared for the Secretary of Defense dated 27 April 2001.
12. Surprisingly the basic SBCT structure is similar to the current Canadian Mechanised Brigade Group (CMBG) structure. The most significant combat arms differences are the presence of an armoured regiment in the Canadian model and its exclusion in the American brigade. However, with the recent ministerial announcement to purchase 66 Mobile Gun systems (MGS) systems and the retirement of the Leopard tank, this difference has narrowed considerably. Of note, the Americans are crewing their MGS with infantry while Canada has elected to crew our MGS with armour corps crews.
13. Future Combat Systems include: vehicle variants - armoured personnel carrier, command and control, reconnaissance and surveillance, mortar, non-line of sight (NLOS) weapon platform, beyond line of sight (BLOS) weapon platform, resupply, a host of unmanned ground and air systems and soldiers systems (Land Warrior). See United States Army web link www.army.mil/2003TransformationRoadmap for additional detail.
14. United Kingdom. Ministry of Defence, United Kingdom White Paper dated December 2003.
15. Australia. Department of Defence, The Australia Approach to Warfare, dated June 2002.
16. Three main points arose from the proceedings of a symposium on the future of Army NCOs: (1) A division of labour between officers and NCOs is necessary. (2) Iits application might be modified (3) NCOs have a leadership connection to soldiers and a desire for more responsibility. Douglas L. Bland, editor, *Backbone of the Army: Non-Commissioned Officers in the Future Army*, Kingston, Queens University School of Policy Studies, 2000, p. xiv.
17. Nathan Rosenburg, *Exploring the Black Box*, Cambridge, Cambridge University Press, 1982, p. 205-207.
18. The concept of NCW is actively being pursued among NATO countries and within Canadian joint and army doctrine. The Canadian Forces Experimentation Centre (CFEC) has conducted studies into the concept and is pursuing its refinement for joint operations. *Canadian Land Force Tactical Doctrine* B-GL-300-002/FP-000 is undergoing amendment

that describes EBO in relation to combat power. These are strong indications that these concepts will continue to grow and influence future Canadian doctrinal development.

19. David Alberts, John Garstka and Frederick Stein, *Network Centric Warfare; Developing and Leveraging Information Superiority, 2nd Edition*, United States Department of Defense, Command and Control Research Program publication dated July 2002, p 87. NCW was constructed to ensure a new approach and solutions to generating combat power. Specifically, it is about developing combat power from effective linking or networking of geographically dispersed combat forces that are knowledgeable due to an ability to share information and convert it into useful battlespace knowledge. It is not about technology but about the potential of dramatically improved battlespace awareness due to shared information and increased awareness. Sensors, units and all sources information could contribute to understanding the battlespace and more importantly to identifying, targeting and delivering effects against opponents.

20. Edward A. Smith, *Effects based Operations: Applying Network-Centric Warfare in Peace, Crisis and War*, United States Department of Defense, Command and Control Research Program publication dated November 2002, p x. EBO describes three domains in relation to effects; physical, information and cognitive. The physical domain includes all physical actions or stimuli. The information domain includes all the means by which one becomes aware of objects, events or a situation. The cognitive domain is psychological or mental process that perceives or makes sense of a situation and then decides on a course of action. Paraphrased from p. 157-191.

21. Ibid, p. x-xi.

22. *Future Force: Concepts for Future Army Capabilities*, Director of Land Strategic Concepts, Canadian Army, published 2003, p. 27.

23. Estimated phase four officer graduates for fiscal year 2004/05 are 62 infantry, 26 armoured, 22 artillery and 25 engineers. Source: Directorate of Army Training, Land Forces Doctrine and Training Systems, Kingston Ontario.

24. Canada, *Advancing with Purpose: The Army Strategy*, Ottawa, Department of National Defence, May 2002, p. 13.

25. A snap shot of Army regular structure reveals six of nine infantry battalions LAV equipped. Two armoured regiments LAV Coyote equipped with the third armoured regiment a designated direct fire unit equipped with a mix of Coyote and Leopard C1. This direct fire unit will receive MGS upon delivery. Anti-armour capability is being considered for regrouping into the direct fire unit and eventually transitioned from a tracked vehicle to a LAV variant. The three artillery regiments are primarily equipped with the L5 gun, a 105mm towed howitzer however there remains a residual M109 tracked capability. Investigation for new indirect systems are ongoing and include a LAV mortar variant and LAV or wheeled mounted missile and gun systems. The Air Defence Anti-Tank System (ADATS) is currently tracked but work to mount its turret on a LAV platform is underway. Combat engineers still utilize M113 variants and an assortment of heavier specialist equipment but are exploring LAV chassis options. However due to the number of specialized tasks engineers will likely remain a mixed fleet of wheeled and tracked vehicles. Note the three light infantry battalions and supporting elements remain dismounted and are supported by a variety of wheeled and aviation platforms.

26. See combat development capability managers terms of reference for a more complete description of operational functions. The terms of reference can be viewed in the critical document link on the Defence Wide-Area Network (DWAN) at lfdts.army.mil.ca/dglcd/cd/main.asp. Capability managers reside in the Directorate of Army Doctrine (DAD), as part of Director General Land Combat Development (DGLCD).

27. Officers are introduced to offensive and patrolling operations and section defensive operations. Fieldcraft, navigation, mine awareness and aircraft/vehicle recognition skills are covered as well as weapons training (rifle, machine gun and grenade) and communications systems. In addition, planning platoon operations and conducting small arms firing ranges are taught.

TARGETING: PRAGMATISM AND THE REAL WORLD

Colonel Ken Watkin, OMM, CD

It is with some interest that I recently read Colonel Stogran's reflections in this Journal on his experiences as a tactical level commander in Afghanistan as part of the Canada's Op Apollo contribution to the Campaign against Terrorism.[1] As the officer responsible for operational legal advice provided during that time, and for a significant portion of the period since September 11, 2001 it will come as no surprise that I was immediately attracted to his references about the law of armed conflict, the rules of engagement and targeting. This undoubtedly makes me one of the "anonymous" lawyers referred to in Colonel Stogran's article and more importantly their leader. I would like to follow up on the invitation in the Note by the Managing Editor set out at page 2 of the same volume of the *Canadian Army Journal* to comment on the professional issues raised in the publication.

Colonel Stogran's reflections highlight a number of legal related issues that require comment. The fact that he makes repeated and quite positive reference to both the rules of engagement and the law of armed conflict demonstrate three points. First, operational law issues are a real part of contemporary combat and peace support operations. Secondly, there was satisfaction at the tactical level with the rules of engagement provided by the strategic and operational levels of command. Finally, there also appears to have been a general level of comfort with the law of armed conflict. Although the feedback has been somewhat anecdotal, the rules of engagement provided to the Canadian Forces for all aspects of the "Campaign Against Terrorism" have been widely regarded as some of the most robust and operationally relevant of the Coalition. This makes Colonel Stogran's comments regarding lawyers and advice in respect of targeting all the more interesting. It was the same military lawyers giving advice on these very pragmatic rules of engagement who were involved with targeting. Further, from a legal perspective, the rules of engagement and targeting involve interpretation of many of the same laws of armed conflict provisions.

Regarding the law of armed conflict, Colonel Stogran suggests to his operational colleagues that a greater understanding of "the LOAC regarding proportionality and the relative importance of military targets"[2] would offer a more sophisticated approach to assessing operational challenges in complex environments such as urban operations. As I commented in an article published in the *Army Doctrine and Training Bulletin*, "Warriors, Obedience and the Rule of Law,"[3] increasing levels of comfort regarding rules of engagement and the law of armed conflict reflect the significant work that has been carried out by both military operational lawyers and army officers over the past decade.

Colonel Stogran's makes particular observations concerning the targeting process; the contemporary relevance of international law; and its interpretation by members of the Judge Advocate General's Branch. It is in respect of these comments that I intend to focus my remarks. In doing so I will use this opportunity to highlight the challenges, as I see them, facing both military commanders and their legal advisors in conducting operations as part of the operational team in the complex security, political and legal environment of 21st century conflict.

Watkin, Colonel Ken, 'Targeting: Pragmatism and the Real World'
Canadian Army Journal Vol. 8.2 (Summer 2005), 66-73.

Like rules of engagement, "targeting" is not solely a legal issue, but rather reflects the operational, policy and legal aspects of modern operations. Put simply, rules of engagement authorize the use of force while targeting controls where, and in some circumstances how, that force is applied.[4] The targeting directive is not just about legal obligations. Rather, it constitutes Chief of Defence Staff direction in the exercise of his command function. Targeting is also not new. In some doctrinal approaches, such as the one found in *Firepower*, targeting is viewed as "a formal staff process."[5] However, in legal terms the precautions for those who plan or decide upon any attack are the same, regardless of whether they fall within a doctrinally formal process or involve any other "acts of violence against the adversary, whether in offence or in defence."[6] Even without the existence of a formal targeting directive (strategic or otherwise) every member of the Canadian Forces has an obligation to carry out a form of targeting process when deciding to pull the trigger or push the button of a weapon or weapons system. In some cases that process will be time sensitive, particularly when acting in self-defence or for force protection. In those circumstances there is often a requirement for an immediate assessment of the target and the consequences of acting. In other circumstances the targeting process will be more "deliberate" with considerably more time available to determine the effect of the targeting decision. This separation of the formal targeting process from the exercise of self-defence is not necessarily clear-cut. This is an issue that has been identified by the United States Army as a result of operations in Afghanistan and Iraq as one that requires further analysis.[7]

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"Targeting" is an integral and fundamental element of the exercise of command and the use of force on behalf of the state. While it involves international[8] and domestic[9] legal aspects of command responsibility, the targeting process also reflects professional expectations of the chain of command. It should be noted that the legal obligations regarding targeting are not limited to those exercising command. It is the planners (G2, legal advisers, G3 staff, etc.), in addition to those who "decide" on an attack, who are required to take precautions when involved in applying violence either in the offence or defence. They must do everything feasible to verify the objectives being attacked are valid ones (i.e. military objectives, whether persons or objects); take all feasible precautions in the choice of means and methods of attack to avoid, and in any event minimize incidental loss of civilian life, injury or damage to civilian objects; and refrain from launching any attack which may be expected to cause excessive civilian casualties or damage "in relation to the concrete and direct military advantage anticipated."[10]

Some of the most interesting aspects of Colonel Stogran's comments relate to the constraints that a strategic targeting mechanism might have on tactical decision-making. Among the issues that come to mind is the effect that tactical decisions regarding the use of force can have on strategic considerations and the search for the appropriate level of command at which decisions regarding those effects should be made. These two issues are intimately inter-related.

Tactical decision-making can have operational, political and legal impact. Clearly, anyone looking at operations over the past decade can readily point to incidents such as the 1999 bombing of the Djakovica convoy in Kosovo[11]; the 2002 "wedding party" bombing in Afghanistan[12]; and allegations of excessive force used at road blocks in Iraq[13] as examples of tactical level uses of force that have had broader operational and

strategic effect. To suggest otherwise would be to deny reality, reflect a sense of willful blindness and ultimately invite greater levels of control than might otherwise be desired or warranted. The modern concept of the "strategic corporal" set out by General Krulak in "The Strategic Corporal: Leadership in the Three Block War"[14] highlights the tactical/strategic interface.

In terms of the legal aspects of targeting, Colonel Stogran's comments reflect that concerted effort to increase familiarization with the law of armed conflict and the rules of engagement is having its impact. However, it is unfortunate that some of the criticism was broadly directed towards international law as "sufficiently vague, outdated and often out of touch with 21st Century realities."[15] Like many products of human endeavour international law is not perfect. However, the law of armed conflict has had a significant impact in the post World War II era in limiting the collateral effects of military operations. That does not mean the law cannot be improved or advanced as warfare changes in the 21st century.[16] It is international law in the form of the law of armed conflict that impacts most directly on targeting. Here there does appears not to be a significant concern regarding fundamental targeting issues such as "proportionality"[17], collateral damage and the classification of targets.[18]

Canadian Quick Reaction Force Boarding helicopter in Afghanistan.

Colonel Stogran's concerns seem to be directed more towards accountability and the degree to which a strategic policy might apply to "tactical objectives".[19] Of course any discussion of the Chief of Defence Staff issued Canadian Forces Strategic Targeting Directive is necessarily limited by its classified nature. However, I believe there are sufficient attributes common to any targeting process that his observations can be addressed in a general fashion. A key issue is the interaction between the various levels of command and the role of a targeting directive as a command tool. Here I emphasize the targeting process for what is: a command rather than a "legal" tool. As suggested in the Army doctrine manual, *Firepower* "[t]he principles of targeting may be applied at all levels of command in all operations of war."[20] While addressed in that manual primarily in terms of the corps, division, brigade, battalion level, the levels of command would also obviously correspond to the strategic and operational levels during joint[21] operations. Significantly, the reference in *Firepower* to the corps level focus being on "deep tactical and operational targets" indicates that even from a doctrinal perspective tactical objectives are not isolated from strategic or operational attention.[22]

Further, different national approaches to targeting and the law of armed conflict can have an impact on the conduct of coalition operations. For example, many Coalition partners of the United States, such as Canada, are parties to the 1998 Rome Statute (International Criminal Court) while that country is not. As has been noted by an Australian military lawyer "ICC interpretations will be relevant to national targeting decisions."[23]

It is simply a fact of modern day conflict that there will be strategic oversight of some operational and tactical decision-making. Obviously commanders at the operational and strategic levels will exercise command. It has been suggested, "if our military force is going to avoid becoming marginalized by other armies, the chain of command is

going to have to come to terms with the spin that our Judge Advocate General (JAG) branch puts on international laws and conventions."[24] However, a review of the targeting approaches of our allies and coalition partners discloses approaches to targeting Canadian Army officers may find quite surprising. The tension between the tactical and higher levels of command is not unique to the Canadian Forces and may be more pronounced in larger armed forces. For example, in Afghanistan CENTCOM appears to have preferred the centralized assignment of missions and target decision making as that headquarters "believed that it possessed the intelligence assets and strategic and operational perspective to best deconflict [sic] friendly from hostile targets. Thus, to CENTCOM, declaring forces hostile at the tactical level did not seem a viable option."[25] In addition, it has been reported that the United States target approval process for Special Forces in Afghanistan can take from three to five days.[26]

Further, there is often a significantly different and more direct involvement at the strategic level in traditional armed conflict targeting decisions than may be the Canadian perception. This strategic involvement, and in particular the participation of political leaders, does not occur for legal reasons. For example, Lieutenant-General Short, the NATO air commander during the 1999 Kosovo campaign, expressed frustration over a targeting process where many targeting decisions were taken out of the hands of the military commanders and were made by "the president of the United States, the prime minister of Great Britain, the President of France, and the president of Germany . . ."[27] Lieutenant-General Short had authority over "mobile" targets, but senior political leaders of the alliance approved individual fixed targets—a fixed target being something that doesn't move.[28] Similarly, it has been reported that the United States Secretary of Defence retained authority to decide on planned targets where more than 50 civilians might be killed or injured during operations in Iraq.[29] However, "raids considered time-sensitive, which included all of those on the high-value targets, were not subject to that constraint . . ."[30]

There is often a significantly different and more direct involvement at the strategic level in traditional armed conflict targeting decisions than may be the Canadian perception

The control over which targets may be attacked is not always uniquely controlled by the nation deploying the military force. In both the 1999 Kosovo and 2003 Iraq campaigns the United Kingdom exercised target approval over other sorties flown by other nations from their installations.[31] A coalition partner may also take the position it can exercise a total veto over all targets.[32]

This interest by the strategic level, including the civilian political leadership, has occurred for a number of inter-related reasons. These include the complex security environment in which modern operations take place and the impact of technology on military operations. Technological advances have increased the asymmetric capability of opposing forces; enhanced the precision with which ordnance can be delivered; provided greater "hands-on" opportunities for strategic level commanders and political leaders; and improved the ability of the media and human rights groups to look over the shoulder of the tactical level commander. It has been suggested that greater technologically-driven knowledge of the conduct of subordinate commanders will make commanders progressively more responsible for lower level decisions. Two troubling results could be increased higher level intervention and a greater tendency

on the part of subordinate commanders to rely on that oversight instead of acting on their own.[33]

The conduct of air warfare has been dramatically changed by the interaction of the ability of airpower to more accurately attack assigned targets and capability of outside groups to attempt to hold those conducting attacks "accountable." The issue of accountability arises not only in its legal manifestation, but also in "the court of public opinion." The expectations regarding targeting have changed dramatically from the air war in the 1991 Gulf conflict to the 2003 Iraq campaign.[34] Significant debate now centers on whether there is an obligation to employ more precise weapons systems found in the arsenals of largely western developed countries.[35]

The change experienced within the air force community is only now beginning to be felt by land forces. Undoubtedly, this is a result of the same confluence of technology, precision and the changing nature of the battlespace. In this regard a Human Rights Watch report assessing the 2003 Iraq conflict, *Off Target*[36] generally found that "U.S. air forces learned some lessons from the problems encountered with emerging targets in recent conflicts,"[37] although it remained critical of attacks on the Iraqi leadership stating that every one of the attacks failed.[38] The conduct of land based targeting came under critical review particularly in respect of the use of cluster munitions. Interestingly, the Human Rights report contrasts the different approach used by the U.S. army and the U.K. forces regarding the employment of lawyers. American military lawyers "who served at the tactical headquarters, reviewed 512 missions, and brigade JAGs approved additional attacks, which were often counter-battery strikes."[39] Many of these target reviews related to strikes near populated areas "[a]lthough less controversial strikes, such as those on forces in the desert were not reviewed."[40] British artillery units had a similar vetting "although it gave observers more responsibility than lawyers." The U.K. approach was to require forward observation "even in the case of counter-battery fire" and they "did not have lawyers in the field."[41] Which of its allies' approach will Canada lean towards in order to enhance interoperability as well as meet our own national requirements?

It is likely that the scrutiny placed on land operations will increase. This raises a number of questions for the Army

It is likely that the scrutiny placed on land operations will increase. This raises a number of questions for the Army. For example, to what extent does existing doctrine such as *Firepower*, issued in 1999, reflect the complete spectrum of operations on the 21st century battlefield? The *Firepower* manual has a very good chapter on "Targeting." However, as the operational environment changes in the 21st century the challenge for both doctrine writers and their legal advisors will to determine whether and to what degree doctrine should be altered to deal with threats from non-state actors. For example, do the references in *Firepower* to easily identifiable military objectives such as a "Motor Rifle Division HQ," an "Independent Tank Bn," a "Scud battery" or "PMP bridging Site" reflect the "Cold War" experience, contemporary traditional forces combat operations or targeting in a "Campaign on Terrorism"?[42] Is it sufficient to refer only to "planned targets" and "targets of opportunity" or should the United States "Time Sensitive Targeting" terminology of "planned" ("scheduled" or "on call") or "immediate" ("unplanned" or "unanticipated") be adopted?[43] As has been noted by one Australian commentator "TOOs are, however, not that same as TSTs . . . While the difference may seem pedantic, the real issue is one of command guidance and what targets are deemed by the commander to be especially critical . . ."[44]

Further, what is the role of the military lawyer at the Division level and below in targeting? While not precluded from participation on the targeting team as a member of the commander's "specialist staffs," the involvement of legal advisors is also not presently specifically provided for in the *Firepower* doctrine.[45] Is it sufficient to state that "[t]he G3 staff monitors the legality of the target in terms of the ROE and LOAC"[46] particularly in the context of complex security operations involving insurgencies, terrorism and non-state actors? Would the role of the military lawyer be better understood throughout the Army if it was doctrinally acknowledged? Recognizing the respective roles, capabilities and input required of targeting staff at the theatre command level represents an important challenge for all participants (G3, G2 and the Legal Advisor).

A CF-18 pilot with Task Force Aviano "The Balkan Rats" awaits clearance as 2 USMC EA-6B Prowlers take off.

Colonel Stogran has identified that the conduct of contemporary operations often requires a sophisticated approach. In this regard the idea of a tactical level target rich environment that can be engaged free from strategic interest or impact may be uniquely situated at one end of the operational spectrum, if it still exists at all. It may no coincidence that Special Forces are increasingly seen as the force of choice in countering many existing threats in the "real world." Certainly, they have little problem recognizing, and indeed capitalizing on, the import of the strategic/tactical interface and with it the nuances of the legal aspects of using force across the full spectrum of conflict.[47]

In many respects, the issue of targeting is at a similar point of development as rules of engagement and law of armed conflict were 10 years ago. As I identified in "Warriors, Obedience and the Rule of Law" there has sometimes been a reluctance to accept the impact of the law on modern operations. This includes a preference on the part of some for a "judgment rules" philosophy that sees the law in terms of "bright line rules" that interferes with the tactical judgment of the commander. Not only does this find no basis in law, but also it "appears inconsistent with Canadian Forces and Army doctrine."[48]

In terms of real world targeting, the requirements of the exercise of command at all levels of combat; the political/policy environment within which armed force is used;

and the application of the rule of law mean that pragmatically[49] the opportunity for tactical freedom in targeting will be impacted by other considerations. In analyzing the impact of these strategic considerations one of the challenges may be isolating operational, policy and legal issues. Regardless, the key for modern military forces is to find the right balance between these factors to ensure the tactical commander is provided the right level of delegated authority for mission accomplishment within the context of the broader campaign plan and government objectives.

Fiat Justitia.

About the Author…

Colonel Ken Watkin is the Deputy Judge Advocate General/Operations where he is reponsible for the provision of operational, international and intelligence law advice in respect of deployments of the Canadian Forces. Colonel Watkin is a graduate of The Royal Military College and Queen's University Law School (LLB and LLM) and from 2002-2003 was a Visiting Fellow at the Human Rights Program, Harvard Law School. Colonel Watkin has published a number of articles on contemporary armed conflict subjects such as the use of force; targeted killing and assassination; and combatants and unprivileged belligerents.

End notes

1. Lieutenant-Colonel P. Stogran, "Fledgling Swans Take Flight: The Third Battalion, Princess Patricia's Canadian Light Infantry in Afghanistan," *The Canadian Army Journal* (2004): 14.
2. Ibid, 20.
3. Colonel Kenneth Watkin, "Warriors, Obedience and the Rule of Law," *The Army Doctrine and Training Bulletin* 3 (Winter 2000/Spring 2001): 26.
4. Targeting has been defined the Canadian Army doctrine publication *Firepower* B-GL- 300-007/FP-001at p. 49 [hereinafter *Firepower*] as: The process of selecting and prioritizing targets and matching the appropriate response to them, taking account of operational requirements and capabilities. This is the same definition found in the United States Department of Defense Dictionary of Military and Associated Terms, 12 April 2001 (As amended through 30 November 2004) at p. 527.
5. See *Firepower, supra* note 4, at 43.
6. See Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts, *opened for signature* Dec. 12, 1977 1125 UNTS 3 [hereinafter Additional Protocol I-AP I], article 49 for the definition of an "attack."
7. *Legal Lessons Learned From Afghanistan and Iraq: Vol. I Major Combat Operations* (11 September 2001 to 1 May 2003) Center for Law and Military Operations (1 August 2004) at 103-106 [hereinafter Lessons Learned].
8. See the 1998 Rome Statute of the Criminal Court (U.N. Doc. A/CONF.183/9), art. 28(1).
9. See the Crimes Against Humanity and War Crimes Act, 2000, Chap. 24, s. 7(1).
10. See AP I, art. 57.
11. See *Final Report to the Prosecutor by the Committee Established to Review the NATO Bombing Campaign Against the Federal Republic of Yugoslavia* at http://www.un.org/icty/pressreal/nato061300.htm.
12. *U.S. Defends Wedding Party Air Raid*, CBSNEWS.com, 15 July 2002 at http://www.cbsnews.com/stories/2002/07/16/attack/main515252.shtml.
13. See *Hearts and Minds: Post-war Civilian Deaths in Baghdad Caused by U.S. Forces*, Human Rights Watch, October 2003 Vol. 15, No. 9(E) at 18-19,available at http://www.hrw.org/reports/2003/iraq1003/iraq1003.pdf and Douglas Struck, *Former Marine Testifies to Atrocities in Iraq, Unit Killed Dozens of Unarmed Civilians Last Year, Canadian Refugee Board is Told*, Washington Post, December 8, 2004 at A 20 (available at http://www.washingtonpost.com/wp-dyn/articles/A45313-2004Dec7.html).
14. See General Charles C. Krulak, "The Strategic Corporal: Leadership in the Three Block War," *Marines: Official Magazine of the Marine Corps* (January 1999) at 29. Interestingly, it also implies that too much control over targeting decisions even at the Battalion level may also be problematic. In this regard, the challenge may not simply be how the use of force is controlled between the strategic, operational and tactical levels of command, but below the battalion level as well. Clearly, part of the solution is the approach suggested by General Krulak: training, the development and sustainment of character, an institutional commitment to lifelong professional development and leadership. See *Id*., at 33.
15. Stogran, *supra* note 1,at 21.

16. See Kenneth Watkin, *Humans in the Cross-Hairs: Targeting, Assassination and Extra-Legal Killing in Contemporary Armed Conflict*, in New Wars, New Laws? Applying the Laws of War in 21st Century Conflicts 137 (David Wippman & Matthew Evangelista eds. 2005).
17. The term "proportionality" can be somewhat misleading. The legal test, often referred to as "the proportionality test" is that the "incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof" not be "**excessive** in relation to the concrete and direct military advantage anticipated." See AP I, art. 57(2)(iii).
18. Stogran, *supra* note 1, at 20.
19. *Id*., at 21.
20. See *Firepower, supra* note 4, at 53.
21. See *id*. at 54-56 for a discussion of targeting in a joint environment.
22. *Id*. at 77.
23. For a discussion of targeting issues in Coalition Operations see Squadron Leader Catherine Wallis, *Legitimate Targets of Attack: Considerations When Targeting in a Coalition*, The Army Lawyer (December 2004) at 44.
24. Stogran, *supra* note 1, at 21.
25. Lessons Learned, *supra* note 7, at 101. This view was not universally shared as was evidenced by a comment from the 10th Mountain Division Staff Judge Advocate: "To even suggest that a command headquarters thousands of miles away could tell friend from foe on the tactical battlefield…is representative of a dangerous trend in the age of instant email/VTC communications capabilities." See *id*. Note 79.
26. See Max Boot, T*he Struggle to Transform the Military*, Foreign Affairs (March/April 2005) at 113.
27. See Lieutenant-General Michael Short, *Operation Allied Force from the Perspective of the NATO Commander*, 78 Int'l L. Studies 19, 23 (2002).
28. *Id*., at 20. Lieutenant-General Short advocates receiving political direction on target "sets", but with decisions on the conduct of the campaign being provided to the military commander.
29. See Douglas Jehl & Eric Schmitt, *Errors Are Seen in Early Attacks on Iraqi Leaders*, N.Y. Times, June 13, 2004.
30. *Id*.
31. See Short, *supra* note 27, at 26 where he states in respect of the Kosovo campaign "Great Britain exercised control over all US airplanes stationed on UK soil. All B-52's and all B-1s stationed at Fairford and all F-15E's stationed at Lakenheath had to have their targets approved by the British Parliament before they could be struck. See also *Operations in Iraq: First Reflections* U.K. (Director General Corporate Communication July 2003) at 5 available at http://www.mod.uk/linked_files/publications/iraq/iraq2003operations.pdf. "The process for approving all targets for UK aircraft, submarine launched cruise missiles or for coalition aircraft using UK facilities was conducted with appropriate political, legal and military oversight at all levels."
32. See Short, *supra* note 27, at 26. 'As many of you know the French exercised total veto over targets. They would take the position that not only would their aircraft not strike the "Rock-and-roll Bridge", no one could strike the "Rock-and-roll Bridge".'
33. See Michael Schmitt, *The Impact of High and Low-Tech Warfare on the Principle of Distinction*, Working Paper, Program on Humanitarian Policy and Conflict Research at Harvard University (November 2002) at 11, at http://www.ihlresearch.org/ihl/pdfs/briefing3296.pdf.
34. For an excellent outline of the targeting issues addressed in the 1991 Gulf War see Micheal Lewis, *The Law of Aerial Bombardment in the 1991 Gulf War*, 97 Am. J. Int'l. L. (2003) at 495, n146, 504-507.
35. See Schmitt, *supra* note 33.
36. Off Target: the Conduct of the War and Civilian Casualties in Iraq, Human Rights Watch, (2003) available at http://www.hrw.org/reports/2003/usa1203/usa1203.pdf.
37. *Id*., at 21-22.
38. *Id*., at 22.
39. *Id*., at 94.
40. *Id*.
41. *Id*. at 95.
42. *Firepower, supra* note 4, at 69.
43. Wing Commander R.J. Keir, *Time Sensitive Targeting, Operation Allied Force, and its Implications for Australia*, 139 Australian Force Journal (2003) at 9.
44. *Id*.
45. *Firepower, supra* note 4, at 56-58.
46. *Id*., at 73.
47. For example, see Colonel Bernd Horn, *Force of Choice: The Evolution of Special Operations Forces Capability*, The Canadian Army Journal (2004) at 99.
48. Watkin, *supra* note 3, at 27. The "judgment rules" approach is set out in Mark J. Osiel, *Disobeying Orders: Atrocity, Military Discipline and the Law of War* (Transaction Publishers, 1999) at pp. 257-258.
49. See The Concise Oxford Dictionary (Judy Pearsall ed., 1999) at 1123 where "pragmatic" is defined as:
    1. Dealing with things in a way that is based on practical rather than theoretical considerations.
    2. Relating to philosophical or political pragmatism.
    3. Linguistics of or relating to pragmatics.

CANCAP
THE CHANGING FACE OF LOGISTIC SUPPORT TO THE CANADIAN FORCES

Lieutenant Colonel (ret'd) Al Morrow, CD

Now, more than ever, the CF is seeking innovative solutions to meet growing operational commitments abroad. The Canadian Forces Contractor Augmentation Program (CANCAP) has been a true success story by permitting our uniformed personnel to focus on their core military tasks, while our CANCAP team members provide the more routine support. This new partnership with industry represents the future of a growing undertaking with the private sector.

Colonel Denis Bouchard
Commander
Joint Support Group

The newly appointed Chief of the Defence Staff, General Rick Hillier, has tabled some far-reaching proposals that will change the structure and employment of the Canadian Forces (CF). His vision of joint task forces deploying quickly to troubled spots in the far reaches of the world will undoubtedly create a demand for an infusion of new resources. Canadian soldiers are among the best in the world, but that level of competency does not come cheaply. The Canadian public rightly expects that the CF will use its resources wisely and judiciously. As a nation, we can ill afford to have highly skilled soldiers doing tasks that can be accomplished in a more efficient manner. As such, the military must continue to seek innovative ways to optimize the use of its resources.1

Soldiers doing what soldiers should be doing!

One of these innovative measures, the use of contracted support, has been evolving and maturing at a rapid rate. During the tumultuous 90s, the Canadian Military found itself stretched to the limit. The Army was reduced from four brigade groups to three, while the number, intensity and location of missions increased. The operational posture of the CF shifted from relatively stable forward-based NATO operations on the "Central Front" to the projection of forces at a dizzying pace to troubled spots around the globe. The ability of the CF to support these operations became problematic. To keep the focus on its core capabilities and to enhance operational flexibility, the CF developed and implemented an innovative and highly successful program to augment its ability to provide logistic support. Born of necessity, but given life through its success as part of the changing face of logistic support, the use of contracted support is now firmly entrenched as an option for support to deployed forces.

Brigadier-General Mike Ward, Director General of Land Capability Development, recently remarked on his expectation that contractors are becoming irrevocably linked

Morrow, Lieutenant-Colonel (ret'd) Al, 'CANACAP The Changing Face of Logistic Support to the Canadian Forces' Canadian Army Journal Vol. 8.2 (Summer 2005), 74-85.

to operational capabilities and that the military needs to think about how to leverage this relationship to best advantage.[2] As this capability continues to evolve, it is likely that most members of the Army, not just those in the support world, will come into direct contact with a contractor at some point in their career. If the contractor is to fulfill his role, it is imperative that all users understand contractual capabilities and restraints. Based on remarks from a number of different quarters, it would appear that the use of contractors has outpaced education and understanding, creating a gap in knowledge that may be impinging on the ability to plan for and employ contractors in the most effective manner to support the soldier on the ground. The aim of this article is to provide a few insights into this evolving capability[3].

Background

Contractors have been used in varying capacities by military forces since the 18th Century. The initial contractors were sutlers, employed by quartermasters to procure goods that the armies required but which they could not plunder from the immediate area. During the Peninsular wars, the Duke of Wellington, in an effort to avoid alienating the population, took a different approach and used contractors to provide goods that his soldiers might otherwise have looted. In our own history, in 1884-1885, almost 400 Canadian voyageurs were recruited to serve as civilian, contracted boat steersmen for a British-led military expedition up the Nile River for the relief of Khartoum. At Quebec City, the Governor General saw them off, reminding them that, even though they were not going to serve as soldiers, they nevertheless should display "many of the same qualities of a soldier" in their work on the Nile.[4] More recently, in Vietnam during the 1960s and 70s, the military and pseudo-military forces used contractors not only in the rear areas but in the front lines as well. One US-based contractor, PAE Government Services, deployed over 30,000 employees during the Vietnam conflict and suffered a significant number of casualties. The first Gulf War saw over 9,500 contractors deployed throughout the Gulf region in direct support of the coalition effort. In addition to being of long practice, the use of contractors by western armies has grown steadily. The US has been a leader in the field, in particular through the US Army's very large and complex Logistic Contractor Augmentation Program (LOGCAP).

In Vietnam during the 1960s and 70s, the military and pseudo-military forces used contractors not only in the rear areas but in the front lines as well

Established in 1985 as a contingency contract, LOGCAP was not used to any great extent until 1988 when it was activated by the US Army Corps of Engineers to construct and maintain two petroleum pipeline systems to support contingency operations in Southwest Asia.[5] In 1992, LOGCAP was activated to support US and UN forces in Somalia, and since that time, has been implemented to support a myriad of operations in dozens of countries, including Afghanistan and Iraq. Similar to the one subsequently developed by Canada, the LOGCAP contract is for a fixed period with option years and is based on reimbursing the contractor for costs, plus an incentive fee based on performance. Halliburton KBR holds the current contract, with its predecessors being Brown and Root Services and DynCorp. One interesting aspect of the US program is the extensive use of collaborative planning and exercises. The first

LOGCAP warfighter exercise was held in 1999 and was used to evaluate complementary capabilities of the Army and the contractor. At the close of that first exercise, General John G. Coburn, the Commanding General of Army Materiel Command, told the participants, "Logistics is the first battle, and LOGCAP is a subset of the logistics battle. LOGCAP is important because the Army has changed. It is now a force projection Army. Those differences require different ways of thinking, using support from contractors in ways we never thought of before . . . It is our future."[6] Working closely with the contractor, the LOGCAP program manager has developed a number of contingency plans to address the potential needs of the US unified commanders in practically every part of the world. Being part of the process enables the contractor to align his efforts with operational plans and to maintain a database of available resources to carry out those plans.[7]

The strategic intent of CANCAP is to provide the CF with operational flexibility through an enhanced logistic support capacity

The first major modern-day foray of the CF into the world of outsourcing support activities for deployed operations began with a specific contract to support forces in Bosnia in 2000. The success of this program led to demands for a more flexible approach that could be used in any future theatre—the impetus for the Canadian Contractor Augmentation Program, more popularly known by its acronym, CANCAP. The officers doing the initial, investigative staffwork were able to take advantage of the US Army's experience with LOGCAP. Although vastly different in size, some aspects of the US program must have been appealing. Having a contingency-based contract with a single supplier for an extended period and not having to re-tender for each operation were two such aspects. Similarly, integrated planning capabilities and having both sides fully aware of the basis for wages, job descriptions, timelines and restrictions were other ideas that could be leveraged and adapted to the Canadian model. And finally, the idea of having a capability that was only paid for when deployed must have seemed rather attractive.

Intent

The strategic intent of CANCAP is to provide the CF with operational flexibility through an enhanced logistic support capacity.[8] The program was not developed to save money. In order to do that, it would have had to replace existing, more expensive force structure—and that was never the intent. As well, even if less expensive, the contractor could not replace unique military capabilities. The aim was to create an additional capability that could be activated as required to relieve the stress on the existing military structure, in particular on prolonged operations. Other than for a program management and planning office, the contractor represents a standby capability that is paid for only when actually used. Financially, this represents a tremendous advantage, but one that must be balanced by an acceptance of the contractor's reduced state of readiness.

The use of CANCAP frees up military personnel for employment where their military skills are needed most and allows support forces to concentrate on their support to war fighting skills.[9] CANCAP provides the capability to plan, mobilize, and deploy key employees and equipment, hire local labour, and manage the delivery of a broad range

Under some circumstances, CANCAP can be used during construction

of support services. The contracted workforce replaces military personnel of a deployed contingent, thus permitting their re-deployment for other purposes, including meeting readiness requirements for new missions. This also helps to avoid repeating past scenarios in which soldiers were deployed time and time again to relatively stable theatres. In some circumstances, CANCAP may provide specific support services from the inception of an operation—if the situation permits. CANCAP facilitates the mobilization and deployment of support capabilities that may be in critically short supply within the CF. Additionally, although the military may choose to move a critical spare, it is the responsibility of the contractor to make his own freight forwarding arrangements. Thus, in the initial stages of an operation, contractor support can free up strategic lift resources for operational priorities and provide an additional delivery methodology for critically needed resources. The contractor also provides additional flexibility to commanders should a cap be placed on the number of uniformed personnel that may be deployed to a given theatre.

Although contractor support is primarily intended for operational level support to deployed forces, it can be extended to the tactical level. The contractor can be employed anywhere along the lines of communication, including staging or support bases that might be outside of the defined theatre of operations. Contractor support is applicable to either single service or joint operations and could conceivably be employed as part of a CF contribution to force level support provided to multinational operations.

Normally, contractors are used to support operations once the security situation permits and the support system has reached a steady state. The focus of contracted support is to enable longer-term sustainment as opposed to the early phases of an operation. However, this is only a guideline. In some instances contractor support may be desired from the earliest phases to provide a construction capability. Indeed, this was the case in Afghanistan, where the contractor was on the ground working as early as May of 2003 in preparation for the arrival of Roto 0 in August of that year.

Admin and Management
Food Services
Material Management and Distribution
Communications
Equipment Maintenance
Health Services
Transportation
Accommodations
Construction
Engineering
Power Supply
Water Supply
Waste Management
Facilities Operations
Roads and Grounds
Fire Services
Geomatics Support

Scope of Services

In order to facilitate planning on both sides, it was necessary during the initial contract development to establish the scope of services that might be provided. The resultant eighteen functional areas represent a catalogue of potential services to be selected either in whole or in part, depending on the needs of a specific mission. In all cases, the contractor provides a command and control capability for

the effective administration and management of the selected services. Similar to a military structure, the contractor provides capabilities across the normal staff functions of personnel, operations, training, planning and finance. In terms of functional capabilities, the support functions that are available include: food services, including, but not limited to, acquisition, storage, preparation, production and delivery; material management and distribution; communications and information systems; land equipment maintenance; health services; transportation; accommodation management and support; ammunition support; and, engineering support. The latter encompasses a wide range of services across both construction and sustainment tasks, including: power, water, waste management, and facilities management; fire services; roads and grounds; geomatics (map support); and, environmental management. The initial CANCAP staff planners were quite perceptive in visualizing potential requirements. Currently, in Camp Julien—Task Force Kabul, all services have been called up, less geomatics, health support[10] and ammunition. Each functional area comprises a number of modular capabilities that can be used to support discrete tasks. For example, in Camp Julien, the contractor provides maintenance support to the "white" fleet, working alongside the military who maintain the "green" fleet. Alternatively, the contractor may provide entire functions, for example food services and water production in Camp Julien.

Some functions can be provided in their entirety.

Impact on CF

CANCAP provides operational flexibility, but with some restrictions. It is not a replacement for force structure. The CF must retain sufficient service support capability to meet the demands of a Roto 0, as well as to cover situations where contracted support is not a viable option. The uniformed community must also retain sufficient depth to meet readiness requirements, as the contractor is not funded for this role. CANCAP was not designed to meet short-notice demands. Although experience has shown that the contractor can react far quicker, the normal planning timeline is 90 days to prepare the task order and a further 90 days for the contractor to hire and deploy personnel to assume service-delivery responsibilities. Although these timelines might seem extensive, they are in keeping with the original intent whereby the contractor would be ready to assume Roto 1 responsibilities. However, the contractor may demonstrate a willingness to assume risk and to operate under less than ideal contractual timelines and circumstances. Although both the military and contractor may share a "can do" attitude, both parties must be cognizant of the contractual parameters and restrictions that are outside of their control. By way of example, Treasury Board regulations prohibit contracting after the fact. This restricts

the contractor to responding to short notice requirements only if they fall within the parameters of an existing contract. If not, the task order must either be amended or a new one initiated. In another example, the current CANCAP contract is for the provision of services. Third-party procurement is precluded. As a services contract, the contractor's purchasing authority is limited to operations and maintenance requirements. Although under some circumstances it might seem logical for the contractor to procure a piece of equipment, it may not be contractually permissible. What might seem logical on the ground is not always possible, or at least not immediately. This makes an understanding of the process of procuring contracted services extremely important before deployment, and makes it prudent that, where contractor support is a potential approach, it be included in the operations planning process at all appropriate levels.

Once the Decision is Made

Contractor support is but one element of the potential support structure for any operation, along with CF and DND support, theatre level military support, host nation support and multinational logistics coordination. The decision to use a contractor starts at the strategic level based on a number of factors such as risk and political will. When contractor support is considered the most practical and viable option, strategic guidance is issued by NDHQ to begin the planning process. This process includes developing a statement of work that provides a full description and context of all deliverables. It is accompanied by a performance evaluation plan against which the provision of services will be measured. In response, the contractor prepares a support plan and a cost proposal. After finding common ground through negotiation, the process is finalized with the issue of a task order authorizing the contractor to expend funds to provide the requested services. Once issued, the task order represents a formal and legally binding agreement between the two parties.

The decision to use a contractor starts at the strategic level based on a number of factors such as risk and political will

Deployed contractor services represent an operational support tool and, as such, it is a fundamental requirement that contractors be managed through the military chain of command. The DCDS is the ultimate authority for approving the deployment of contractors into a theatre of operations. Although the Task Force Commander has authority over contractors once deployed, contracted personnel are not employees of the Crown. Normally, the in-theatre command and control structure would include a military chain of command, a CANCAP contractor chain of command and coordinated military-contractor technical channels of control and communication.

Contracted support is a business arrangement. The contractor is engaged to provide very specific and well-defined services. Although there are some controls over the way in which the service is provided, the contractor has the flexibility and is encouraged to apply civilian best-business practices where appropriate. The contractor is not expected to replicate military organizational structure or operating methodologies. Similarly, there are significant differences between soldiers and civilian employees in the terms and conditions of compensation, benefits and job security.

While it is expected that the contractor and uniformed support elements will work together as part of the overall support team, the individual and collective differences can create difficulties when individuals are embedded within each other's chain of command or work force. Accordingly, the contractor is best employed when providing a discrete service, either in its entirety, such as food services, or as an identifiable sub-function, such as a tire repair shop within a maintenance platoon.

An International Workforce.

On deployments, CANCAP contractor staff are described in the National Defence Act as "civilians who accompany Canadian military forces" and are, as such, subject to the Code of Service Discipline. If a contracted employee is deemed to have committed a major service offence that compromises the security of the operation or is construed as a Criminal Code of Canada offence, the employee can be tried under the provisions of a special general courts martial. For lesser offences, the contractor's project manager, in consultation with the military authorities, manages disciplinary issues. This ensures relative consistency across the population of the camp.

Laws of war treaties (Hague and Geneva Conventions) address the status of contractors involved in supporting military operations. Non-locally engaged employees fall into the category of persons who accompany the armed forces without actually being members of the military. These employees are considered non-combatants, provided they have received the full authorization from the armed forces they accompany and are provided with an identity card. Although they risk being attacked as part of a legitimate target, if captured, they are entitled to prisoner of war status.

Service contracts normally preclude the contractor from being armed or from engaging separate security services. For this reason, force protection usually resides with the military. The normal standard is the same as that afforded to military personnel. In the case of CANCAP, this includes protection during movement and the provision of personal protective equipment such as respirators, flak vests and helmets. Although intended for employment in a relatively stable environment, civilian employees must be prepared to face the normal dangers of working and living in war-torn parts of the world. Pre-deployment training, given over a five-day period, covers such subjects as mine awareness, first aid and decontamination in a chemical environment. Although falling well short of military training, it does give the employee an understanding of the risks he or she will face and of the immediate actions to take in the case of attack. Unlike the military, their training includes sessions on preparing them to face the challenges of travelling via civilian airline into Kabul—a trip never to be forgotten! For many, their first serious exposure to the military comes as they leave the Kabul airport, don a helmet and vest and jump into the Bison for the trip to Camp Julien.

The Contract

The current CANCAP contract was awarded in December of 2002 for a period of five years, with a further five years at the option of the Government. It is a sizeable contract that brings with it a sizeable organization for governance. NDHQ ADM (Mat) is responsible for overall management. The approval authority for the employment and funding of CANCAP for specific operations is the DCDS. J4 Log, as the NDHQ Joint Staff Coordinator for CANCAP services, initiates the staffing process. As directed by the strategic level, the Joint Support Group plans for and recommends the employment of CANCAP through developing mission specific task orders. Public Works and Government Services Canada (PWGSC) and Director General Procurement Services (DG Proc S) oversee the process. PWGSC is the contract authority, responsible for management of the contract, and DG Proc S is the requisition authority responsible to provide policy guidance and advice on implementation and administration.

> The government exercises considerable control over the entire process by approving the scope of work, the funds available to do that work, the level of staff effort that will be funded and the standard to which the service must be delivered

In theatre, the commanding officer of the National Support Element (CO NSE) is responsible to the Commander JTF for all operational level support, be it military or contract. The Contracts Management Cell (CMC) works for the CO NSE and is responsible to him or her for administrative and contractual matters of CANCAP. The contractor's project manager reports to the CO NSE and works closely with the CMC on managing contractual issues. The primary reference document for all these groups is the task order, comprised of contractual terms and a statement of work, supported by a performance evaluation plan (PEP), the contractor's support plan, a cost estimate and a cost rationale.

Thus far, the basis of payment used for CANCAP task orders has been "cost reimbursable plus a performance incentive fee." In simple terms, this means that the contractor is reimbursed for expenses incurred in providing the agreed to services, with profit being determined through the performance incentive fee (PIF). The

Camp Julien, Kabul, Afghanistan

advantage to DND is that the contractor has every incentive to provide the best possible service, constrained only by the financial limitations of the contract. The government exercises considerable control over the entire process by approving the scope of work, the funds available to do that work, the level of staff effort that will be funded and the standard to which the service must be delivered. The advantage to the contractor is that there is essentially no risk of financial loss as long as expenses are within the parameters of the contract. The disadvantage to the government is the expenditure of considerable resources, from the strategic to the tactical level, in monitoring and managing the contract. As the contract is cost reimbursable, considerable effort is placed on ensuring the efficacy and correctness of process, in addition to that placed on the delivered product. The disadvantage to the contractor is the need to exceed the standard, in both product and process, in order to make a profit. In places like Afghanistan, the difficulties of freight forwarding, coupled with the extremes of weather, can make this a significant challenge.

The current CANCAP workforce in Camp Julien is over 400 strong and represents a myriad of trade, professional and technical skills

The Contractor—SNC-Lavalin PAE Inc.

The CANCAP contract is currently held by a joint venture, SNC-LAVALIN PAE Inc. As a joint venture, the company comes with quite a lineage. Both of the parent companies, SNC-Lavalin out of Montreal and Pacific Architects and Engineers (PAE) out of Los Angeles, are international companies with offices and projects around the world. This was of great advantage during the early stages of the current Afghanistan mission when the joint venture was able to leverage the capabilities of PAE, which was already operating in Kabul. Similarly, with offices in Jakarta, SNC-Lavalin would have been perfectly positioned as an initial contact point for the contractor, had the recent Tsunami humanitarian mission been extended to include CANCAP participation.

As part of the original contract, the contractor was required to prove his service delivery capabilities before being employed off shore. This evaluation took place during the Brigade Training Event in Wainwright in early 2003. The pace of implementing contracted support was to pick up rather briskly. Concurrent with the Wainwright exercise, the contractor was tasked to begin planning to assume service delivery responsibilities in Bosnia and to begin planning for both the construction and sustainment of camps in Kabul. To make it work, the planning process was compressed and the contractor took considerable risk in providing services well in advance of the originally envisaged timelines. To complicate matters in Afghanistan, three camps were constructed simultaneously—the theatre activation camp, the Kabul Multi-National Brigade (KMNB) Camp Warehouse and the main Canadian base, Camp Julien. During the construction phase, material was delivered by

Receiving the General Service Medal from Her Excellency the Right Honourable Adrienne Clarkson

the largest Canadian-organized airlift since World War II. Moving vast quantities of materiel through the city was a unique challenge, to say the least. However, despite the difficulties of working in a war torn country and a few expected setbacks, the camps were completed in less than three months and in time for the arrival of the Battle Group in August of 2003—an achievement of note by any measure.

Notwithstanding eventual success, relations were at times strained due to misunderstandings on both sides. The contractor was struggling with a huge start-up curve and the military was adjusting to contracted support. The issue was exacerbated by the constantly changing situation in Afghanistan, in both locations under development. Fortunately, many lessons were learned on both sides and Camp Julien, the main Canadian camp in Afghanistan, is regarded by many as the finest of its kind in that part of the world. With its own waste effluent plant, three electrical generation farms, water bottling plant, fire department and accommodation for 2500 personnel, the project represents a notable achievement. Additionally, the CF has benefited from not having to deploy highly trained soldiers to do tasks that can be done by contracted employees who come fully qualified and are paid solely for the period of employment.

The contractor's work force reflects the international nature of its environment. The current force in Kabul represents all ten provinces of Canada plus another eight countries—Nepal, India, USA, England, Scotland, South Africa, Sri Lanka and Afghanistan. At this time, for security reasons, the only Afghanis in the work force are those working for subcontractors who are on the camp for specific, short term work and who are escorted throughout their stay. By contrast, in Bosnia, the locals comprised a significant portion of the workforce, an arrangement that served as part of the "nation building" effort. In time, as the situation stabilizes, this may be possible in Afghanistan. Given the situation of high unemployment, such a prospect represents a huge step towards individual and collective economic well-being.

The current CANCAP workforce in Camp Julien is over 400 strong and represents a myriad of trade, professional and technical skills. Some have come for the experience, some for the money, and some out of curiosity. Although many stay for a year, some, who find the lifestyle both challenging and rewarding, sign on into a second year. Regardless of their motivation, all CANCAP employees are extremely proud of the contribution they are making towards enabling the military to accomplish its mission in Afghanistan. As John MacLeod, the current project manager in theatre explains, "our goal is service to our customer, on time and at an acceptable cost. Indeed, we try very hard to exceed the standards set for us by the military. Our employees are proud to be part of the support team and we take every opportunity to be part of the life of each rotation. For our Canadian employees, receiving the general service medal is a powerful and emotional experience that helps them to understand better the great pride with which Canadian soldiers wear their honours and awards. The increased awareness about the military gained here, combined with the opportunity to see the devastation of war, gives these employees a renewed appreciation for their country and for those who serve it."[11]

The Future

Recent announcements about a continued and increased presence in Afghanistan may well lead to a continued employment of CANCAP capabilities. The current contract

limits support to the CF alone, and only on deployed operations. However, the program's success could lead to a broadening of the concept. The recent emphasis on a "triple D approach" involving defence, diplomacy and development, could create a demand for similar support to other government departments, including the various civilian police missions to which Canada has contributed. The prime customer to date has been the Army, but with "jointness" on the rise, pressures on the Navy and Air Force to find support options using other than highly trained sailors or air men and women will likely grow. The CANCAP approach must certainly be an option. Finally, although contracted support was not used on the recent deployment of the disaster assistance relief team to Sri Lanka, perhaps, if the mission had been extended, the provision of follow-on, contracted logistic support would have been a viable alternative to uniformed support.

Conclusion

By all accounts, General Hillier comes across as a no-nonsense commander, firmly resolved and committed to transforming the CF into a more flexible organization. Anyone who is mildly engaged in the military debate will quickly appreciate that this dictates a focus on operational capabilities. By relieving the need to employ highly trained military members on routine support duties, CANCAP has the potential to serve General Hillier well in this quest.

FRAMEWORK FOR THE DEVELOPMENT OF THE CANADIAN CONTRACTOR AUGMENTATION PROGRAM (CANCAP) 07 July 2000

1. The recent operational tempo has imposed considerable strain on our capacity to sustain our forces on deployed missions. The Military Occupation Specialty (MOS) review and more recently the National Military Support Capability (NMSC) study have highlighted our shortfalls in support readiness and sustainability. From the study, the NMSC project identified the need for a generic pre-facilitated contractor support arrangement for deployed operations. Concurrently, the CF Deployed Ops Theatre Rationalization Project was aimed at developing and implementing a contractor support capability to our forces in Task Force Bosnia Herzegovina (TFBH) with a view to reducing the demands on military personnel thus addressing important Quality of Life issues. The CF Deployed Ops Theatre Rationalization Project was to also examine the potential for employing contractors in support to other CF or Canadian Government Operations in Canada or abroad in addition to the TFBH contract. The objective is to develop a new capability in the form of a Canadian Contractor Augmentation Program (CANCAP).
2. The intent of CANCAP is to provide the CF with additional operational flexibility through enhanced support capacity. It will free up military personnel for employment where their military skills are most needed and allow more concentration on the preservation of support-to-warfighting skills in our support forces.
3. CANCAP will be initiated as a DCDS project, with COS J3 as the Project Leader and J4 Log as the Project Director. Project Management will rest with ADM (Mat). The project scope will encompass both contingency planning and the execution of support operations on deployed missions. Project definition will be structured on the basis of lessons learned from Operation ABACUS (Y2K - LOGCAS) and the TFBH contracting solutions. We will use the Defence Services Program (DSP) process to define and competitively tender the range and scope of support functions, with a view to developing CANCAP to operate within a strategic and operational level military support cadre to be devised by the NMSC Project. CANCAP will be employed as part of our force structure.
4. I intend to initiate the project aggressively and to deliver a CANCAP capability by Dec 2001. This will represent a significant force multiplier. It may not produce financial savings but I anticipate benefits in operational flexibility and on relieving the pressures on our support personnel. I solicit your support in realizing the potential of CANCAP. COS J3 will issue separate guidance to chart the development of CANCAP.

R.R. Henault
Lieutenant-General
Deputy Chief Defence Staff

About the Author...

Al Morrow retired from the Canadian Forces in August of 2004 after 37 years of service. His last appointment in the Army was as the Deputy Director of the Directorate of Army Doctrine and DAD 9 (Sustainment). At the time of writing, Al was employed as the senior planner for SNC-LAVALIN PAE, the company that holds the CANCAP contract.

End notes

1. This article is an expanded version of " CANCAP :The Changing Face of Logistic Support to the Canadian Forces " by Brigadier General (retired) Ernie Beno which appeared in Vanguard April/May 2005. With permission of the author parts of that paper have been used verbatim
2. E-mail from BGen Mike Ward dated 21 Feb 05
3. There are many different types of contracts available to the Canadian Forces. This article concentrates on contracted services provided through one specific program—CANCAP.
4. http://collections.ic.gc.ca/heirloom_series/volume5/82-85.htm Nile River Expedition 1884-1885 Canadian Boatmen Challenge the Nile. For a more detailed account see Roy MacLaren, *Canadians on the Nile*, (University of British Columbia Press 1978).
5. Peter J. Higgins, "Civilian Augmentation of Joint Operations", Army Logistician— http://www.almc.army.mil/alog/issues/JanFeb03/MS870.htm
6. Major Virginia H Ezell, USAR, "Logisticians and Contractors Team for LOGCAP Exercise", http://www.almc.army.mil/alog/issues/NovDec99/MS500.htm
7. James Folk and Lt Col Andy Smith USAR, "A LOGCAP Success in East Timor", Army Logistician, http://www.almc.army.mil/alog/issues/JulAug00/MS566.htm
8. Statement of Work, Canadian Forces Contractor Augmentation Program, Department of National Defence, 17 July 2002 Version 4.0
9. Framework for the Development of CANCAP—signed by RR Henault, LGen, Deputy Chief of Defence Staff July 2000. (enclosed)
10. The contractor provides health services to his own employees, including medical evacuation. The military provides emergency and trauma backup.
11. E-mail from Mr John MacLeod, 27 Mar 05.

CANADIAN CORPS LOGISTICS DURING THE LAST HUNDRED DAYS, AUGUST-NOVEMBER 1918

Lieutenant Colonel John D. Conrad, CD

Nowhere was the modernity of the First World War better illustrated than during the battles of the Hundred Days, which started with the attack at Amiens on 8 August 1918 and finished with the capture of Mons 100 miles away on November 11. At Amiens, inter-arm cooperation among the forces of the British Empire reached new heights as aircraft, guns, tanks, and infantry all acted in concert.[1]

Major-General Sir Eric Geddes

Director-General of Military Railways and Inspector-General of Transportation 1916-17

If staff planners and historians ever contemplate the First World War they are invariably drawn to the solemn heights of Hill 145 on Vimy Ridge. For most Canadians, Vimy embodies all that is worthy of serious reflection in the war to end all wars; but Vimy Ridge has probably dominated professional military reflection of the First World War for long enough. There is no denying that the battle was an enormous milestone in the history of the Canadian profession of arms. Certainly it was at Vimy that the Canadian Corps fought together as a formation for the first time, a fact that can neither be trivialized nor forgotten. Lost in Vimy's long shadow, however, is perhaps an even more significant military achievement-the Hundred Days Offensive that finally broke the stalemate on the Western Front and brought an end to the First World War.[2] In terms of inter-arm cooperation and the true nature of modern warfare, the Hundred Days Offensive prosecuted by the Allied Forces was an extraordinary military achievement. It is more than a little ironic that researchers have only probed the surface of the campaign that inflicted twenty per cent of Canada's war dead in the 1914-18 conflict.[3] This final offensive push, that began on 8 August 1918 at the Battle of Amiens—which General Erich von Ludendorf described as "the black day of the German Army"—and ended with the capture of Mons in November, is the much more telling laurel for the Canadian Corps.[4] As such, the campaign serves as a rich area for the study of Canadian Army operations in a modern context. While the pivotal Battle of Vimy Ridge continues to cast a long shadow over the Canadian national psyche and the esprit de corps of the current Canadian Forces, the lessons of the Hundred Days are only just beginning to be appreciated.

Conrad, Lieutenant-Colonel John D., 'Canadian Corps Logistics During the Last Hundred Days, August-November 1918' Canadian Army Journal Vol. 8.2 (Summer 2005), 86-98.

Most contemporary studies of Canadian Army logistics begin with the Second World War where the doctrine of brute logistics came of age.[5] The prevailing remembrance of the First World War remains the grinding attrition of the Western Front and the popular belief holds that nothing can be learned from such a fatalistic quagmire. On the contrary, the last stanza of the First World War is immeasurably valuable for the study of some highly successful Canadian logistics practices. The campaign enabled the realization of a high water mark in the embryonic yet durable Canadian Army logistics system. Not only was the Canadian Corps moving on a grueling offensive, fighting three major battles at Amiens, Arras and Cambrai in a short period of time, but it also acted as the spearhead of the attack, the hammer that the Allies used to "crack some of the most vital points of the German defence."[6] Use of the Canadian formation in this fashion presented significant logistics challenges. For the Canadian logistic structure on the Western Front, the Hundred Days Offensive would be the greatest test of the war. Canada's Hundred Days, as G.F.G. Stanley dubbed them in his seminal work on Canadian soldiers, would set the mold for Canadian Army combat service support (CSS) doctrine and practices for the remainder of the twentieth century.[7]

The senior leadership in the BEF and in particular the Canadian Corps was able to overcome an embedded institutional bias that encouraged commanders to remain aloof from their logistics and administrative staffs

Notwithstanding the lethal modernity of combat power in the trenches of Europe from 1915 to 1917, the logistics systems sustaining the British Expeditionary Force (BEF) and by extension, the Canadian Corps, on the Western Front were initially static and ill suited for offensive success.[8] However, if an offensive were to succeed on any grand scale, the lines of communication (LOCs) would need to stretch and remain responsive to more stretching. A review of the logistics activity that sustained the Hundred Days campaign demonstrates what is achievable when imagination and creativity meet experience. The senior leadership in the BEF and in particular the Canadian Corps was able to overcome an embedded institutional bias that encouraged commanders to remain aloof from their logistics and administrative staffs.[9] The attention afforded Allied logistics in 1916 by Field Marshall Haig at the operational level and Lieutenant-General Byng at the tactical level was instrumental in attaining offensive success in late summer 1918. This issue is vividly demonstrated on closer inspection of the BEF logistics shortcomings in 1916 and Haig's role in correcting them. Without the requisite changes at the strategic and high tactical levels the Hundred Days campaign would not have been possible. Additionally, the Canadians were able to harness imagination to overcome the challenges of a changed battlefield. Unique Canadian Corps characteristics like redundancy, an enhanced transportation capability, and affiliation enabled the Corps to adapt to the offensive requirement in a manner denied to the smaller British Corps. When the active interest of commanders was combined with a high degree of innovation among Canadian Corps logisticians superlative results were achieved during a strenuous period of combat.

Logistics Architecture-The Canadian Corps Within the BEF

A professional appreciation of the Canadian Corps' logistic achievements is best grounded on a review of the respective staffs and line units that directly impacted its sustainment process. The Canadian Corps' logistics architecture was integral to the

larger framework of the BEF. At the operational level, the BEF logistics staff was divided into three different branches of the General Headquarters (GHQ): an Adjutant General Branch (AG Branch), an Inspector General Communications (IGC) and a Quartermaster Branch (Q Branch). The AG Branch handled such specific sustainment issues as personnel, casualties, medical and sanitary services.[10] The IGC oversaw the management of all traffic on the LOCs from the seaport to the fighting corps.[11] The Quartermaster General (QMG) commanded the Q Branch and his staff was responsible for the replenishment of the field force.[12] Each level below the GHQ had

Horse and water cart mired in mud after straying off a fascine road. The horse was rescued, but the water cart sank from sight. The logistics on the Western Front was a regular nightmare for all involved.

a smaller, corresponding logistics staff centred on the QMG Branch that covered all logistics concerns. For example a Deputy Adjutant and Quartermaster General (DA and QMG) presided over the sustainment at the corps level. The Canadian Corps was blessed with a talented British DA and QMG, General G.J. Farmar, whom General Arthur Currie retained in that post through to the end of the war, despite the growing competencies of senior Canadian logisticians.[13] Assistant Adjutants and Quartermasters General (AA and QMGs) were the senior Q officers in the divisions.

Like the corresponding levels of staff, logistics units became progressively smaller and more mobile the closer they got to the front. Army level units included the static organizations that operated the ports, warehouses, and railways (both heavy and light). The sinews of army support units ended at the forward railheads. From here, corps units would move the supplies forward to designated refilling points from which divisions would draw. In the Canadian formation, these corps level logistics assets were mechanical transport companies—a luxury not common to all corps of the BEF.[14] Initially Canada operated two types of corps mechanical transport units: the Ammunition Park and the Supply Column. The former of course hauled all the Corps' ammunition and the latter was charged with hauling all other classes of supply. A unit called the divisional train anchored logistics in the various Canadian divisions. The divisional trains moved materiel to the forward brigades from the refilling points

established by Corps resources. They were equipped with horses and wagons to meet the mobility challenge close to the fighting. The divisional train proved to be so resilient in structure and concept that Canada would never truly move away from them.

Triumph of Personalities

The British commanders that held direct sway over the Canadian Corps, specifically Generals Douglas Haig and Julian Byng, invested time in their sustainment structure. Both of these generals were able to enhance the logistics functionality of the Canadian Corps in a different yet profound manner. The British Army Field Service Regulations (Part II) of 1912 encouraged commanders to remain aloof from matters of administration.[15] Unfortunately such a practice eroded the generation and application of combat power. Contemporary manoeuvre warfare doctrine acknowledges that combat power is generated through the integration of five balanced ingredients, including that of sustainment.[16] Overlooking one of the non-hierarchical operational functions severely impairs an army's ability to fight. The actions of Haig and Byng strongly suggest that they understood the elixir of combat power to include a sound dose of logistics. A complete understanding of Canadian Combat Service Support (CSS) success during the Hundred Days cannot be achieved without a brief consideration of their respective contributions.

A typical division in the Great War required 150 tons of supply each day

History has been particularly unkind to Field Marshall Haig for his part in such atrocious campaigns as the Somme and Third Ypres. It is easy to overlook accomplishments that speak to his abilities and staying power as the Commander-in-Chief of the BEF from late 1915 forward. Gervais Phillips strikes an accurate chord in recollecting Haig's administrative accomplishments:

> *His army was well supplied in the field, his wounded swiftly evacuated and well cared for…the figure of Haig looms ever larger as that of the man who foresaw more accurately than most, who endured longer than most and who inspired most confidence amongst his fellows.*[17]

Not only did Haig have to solve the challenges of unprecedented volumes of materiel but he also had to deal with enormous advances in technology. Some of the biggest seeds of innovation that would impact the Canadian Corps during the Hundred Days were sown at his insistence after the Somme Offensive of 1916. Haig knew that re-working the entire replenishment system was imperative after the Somme. Despite some prescient preparations in British industry before the war, the strategic level sustainment apparatus of the BEF, and by extension the Canadian Corps, was disjointed.[18] During the height of the Campaign, the transportation system proved incapable of delivering the crushing volume of materiel required at the front. A report of the Ministry of Overseas Military Forces of Canada recorded: "After the Battle of the Somme, it was clearly proven that road and animal transport could not alone bring forward…the weight of war material required to stage a modern battle."[19] The replenishment demand, for example, so exceeded available transportation resources that the Canadian corps-level assets quickly adapted the technique of continuous running of mechanical transport:

All during the Somme the 1st Divisional Supply Column worked twenty-four hours a day. We had two drivers for each vehicle—a driver and an assistant driver. During daylight…we put the assistant driver and a loader on the vehicle. During hours of darkness the first driver took over…[20]

Haig was able to crack the institutional bias of the 1912 Field Service Regulations and partake in the resolution of this logistic conundrum. Against strong military advice, Haig sought the assistance of a civilian transportation expert, Sir Eric Geddes, to overhaul the sustainment system.[21] Geddes confirmed that the system of replenishment sustaining the BEF in 1916 was indeed inadequate. The supply and transport systems were disjointed, with no overarching control over the process. Geddes examined actual requirements in France and then systematically studied the various transportation means used to get it there. A typical division in the Great War required 150 tons of supply each day.[22] Geddes was quick to discover that materiel moving into France was at a level far below this actual requirement. In essence, the BEF was sipping through a straw when it actually required a fire hose worth of materiel, some 290, 000 tons per week by Geddes' detailed 1916 estimate.[23] Redundancy and volume were necessary to fight the war in Europe and to achieve these prerequisites a holistic approach to replenishment would be required. Geddes suggested that the BEF transportation system be streamlined and placed under the control of one man.[24] He further recommended adjusting the capacity of the replenishment system so that materiel would never again constrain British operations. Haig's implementation of the bulk of Geddes' recommendations was key to making the strategic replenishment system work. If not for Haig's attention on his replenishment problem and his moral courage to demand the assistance of a civilian consultant, the foundation of modern sustainment would not have been constructed. His ability to ignore dated doctrine in contemporary service regulations and invest considerable effort in his sustainment architecture would have a telling effect on the Canadian Corps.

Byng sought to increase Canadian staff competency by displacing good British staff officers holding key staff appointments within the Corps with an ever-increasing number of Canadians

Lieutenant-General Julian Byng, who assumed command of the Canadian Corps on 28 May 1916, was instrumental in advancing the Corps' logistics proficiency.[25] This increased proficiency was achieved by an increased emphasis on Q staff training and attention to administrative detail. Byng was a talented officer who quickly won the trust and admiration of the Canadians, and recognized that they "were too good to be led by politicians."[26] Intelligent, balanced and insightful, he too was able to overcome the 1912 prejudice of Field Service Regulations Part II. Byng, a hard-nosed war fighter, was the beneficiary of a unique background and therefore acutely valuable in increasing the standard of Canadian logistics. His logistics education had begun early in his career when he worked for General Redvers Buller. Ian McCulloch observed that: "Byng became a staff major at Aldershot, working under General Redvers Buller. There, Byng was heavily involved in the administration and training of the command…"[27] Buller was the father of the modern Army Service Corps and a key proponent in modernizing British Army logistics.[28] Serving with General Buller ensured that the young leader was

immersed in all things logistic at an impressionable juncture. This early familiarity with logistics planning was reinforced by Byng's experiences fighting under Buller in the Boer War. Byng became well versed in the criticality of Lines of Communications (LOC), as attacks on logistics lifelines were a large part of the tactics in South Africa.[29] The lessons of the Boer War taught him that logistics were worthy of command attention both as friendly vulnerabilities and desirable enemy targets.

After the Somme, while Haig worked the changes required for the repair of the strategic replenishment system with Sir Eric Geddes, Byng strengthened the ability of the Canadian Corps to project logistics on the battlefield. He fully retrained the Corps staff and improved the formation's operational functionality, including sustainment as Jeffrey Williams observed: "No function that contributed to the Corps' effectiveness—engineers, signals, supplies, medical, and transportation—escaped Byng's eagle eye...."[30] Further, Byng sought to increase Canadian staff competency by displacing good British staff officers holding key staff appointments within the Corps with an ever-increasing number of Canadians. This process, which would have included the Q staff, resulted in a greater number of Canadians receiving formal staff training.[31] He also polished the existing sustainment apparatus at the lower levels, taking an active interest in the smallest minutiae of the Corps' CSS. Jeffrey Williams captured General Byng's remarkable *je ne sais quoi* in the deft correction of a poorly maintained harness during an inspection of a unit transport section:

> *He [Byng] looked it over thoroughly, fingering a buckle here and turning up a strap there, indicating that things ought to be better kept. An NCO said, 'Sir, the leather is so old that it won't take a shine.' Byng looked at him thoughtfully, 'Well, I'm old, but I am not dirty.' It was enough.*[32]

Finally, Byng held unit Commanding Officer (CO) retreats during the winter months which entailed a number of COs spending a week as guests at his headquarters. At these spartan but cordial retreats, the Corps Commander took the time to get to know his battalion commanders and together they spent time on "the study of tactical problems and methods of improving the administration of their units."[33]

Lieutenant-General Byng improved sustainment in the Canadian Corps quite literally from top to bottom. The Corps was much more adept at sustaining a modern battle by the time Currie, the brilliantly successful Canadian officer who had demonstrated his skills as a division commander at Vimy Ridge, replaced Byng in 1917. Drilled and polished under the enlightened but iron guidance of a soldier's soldier, the logistics structure of the Canadian Corps stood ready to put the innovations of late 1916 to the ultimate test.

Logistics Peculiarities of the Canadian Corps

The most profound sustainment lesson grasped by the Canadian Corps during the Hundred Days was that offensive success had to be underwritten by tactical logistics mobility. Both its movement in contact with the enemy as well as its large-scale administrative movements demonstrated proof positive of the Corps' sophisticated mobility. The Canadian Corps was passed between British Armies during the Hundred Days like a prized carpenter's tool with the intent of breaking key nodes in the German defences. John English observed: "Time and again, the Canadian Corps was used to crack some of the toughest and most vital points of the German defence, thereby

creating the conditions and opportunities that allowed the Allied Armies to drive the German war machine to the point of collapse."[34] For the previous two years, and indeed the balance of the Hundred Days campaign, the Corps was ensconced in the First British Army commanded by General Sir Henry Horne.[35] But for the opening gambit of the Hundred Days, the Canadian Corps was first passed to General Sir Henry Rawlinson's Third Army for the Amiens attack. The Corps, in conjunction with the Australians, would act as the Third Army's spearhead.

Operations at Amiens were defined by a taut secrecy that resonated throughout all levels of preparation. Transportation and movement planning were mightily tested because of this defining characteristic. By 1 August 1918, when the Canadians began to move down to the Amiens sector for the coming offensive, there remained only six days to extend the logistics conduit from Boulogne. Currie did not inform Farmar, his QMG, about the requisite move of the Corps until 29 July, giving his logistics staff approximately 24 hours of planning before the move needed to commence.[36] In the course of compressed battle procedure, the divisional QMGs were left with a mere five days of advance notice:

Perhaps the most obvious and telling key to the sustainment success of the Canadian Corps was size

> *The Corps Commander intentionally avoided a formal conference for the discussion of the actual operation until after the relief of the Corps in the line was completed…The instructions regarding the operation were transmitted to the C.R.A Brigade Commanders and A.A. Q.M.G. for the first time at the Divisional Commander's Conference August 1st 1918.*[37]

Furthermore, the Corps would need to move and prepare for battle in an unfamiliar sector under complicated conditions. They were assigned only two main supply routes, the Amiens-Roye road and the Amiens-Villers Bretonneux. These two roads could only be used at night:

> *The Division is now in the first stage of a concentration march preparatory to assembling in battle positions. Surprise is to be the essence of the operation and therefore, all movement is to be restricted to the cover of darkness…transport is to be parked under trees and troops not to be allowed to move about…*[38]

To complicate matters, the sector now occupied by the Corps had been a French sector, bereft of the compatible commodity points to sustain a British formation.[39] This placement in a new, non-British sector meant that the logistics chain would have to haul from refilling points further afield. Heightened distances as well as extended LOCs over darkness strained the system and frustrated General Farmar as demonstrated in his wry after-action report:

> *While it is recognized that the whole success of the operations was due to the secrecy under which the operations were arranged, it is considered that the responsible staff officers could have been taken into confidence, with considerable benefit to all concerned…*[40]

The sustainment test was an enormous one. However, the Canadian Corps logistics structure was resilient enough to meet the challenge as Schreiber observes:

The transport personnel of the CASC had overcome a tremendously overburdened transport system in order to provide the artillery with ample ammunition: 291,000 rounds of all calibers with a total weight of 7,065 tons, had been trucked into position in a period of just over three days…[41]

Clearly the Canadian Corps possessed an exemplary logistic capability that made the administrative and tactical operations at Amiens possible. The salient features of the Canada's little 'Shock Army'—robust structure, enhanced mobility, and guarded affiliation—all contributed to this ability and must be further explored.

Perhaps the most obvious and telling key to the sustainment success of the Canadian Corps was size. The Corps was a very large one, equating in strength to a small British Army. Whereas a British division consisted of approximately 15,000 soldiers, a Canadian division had in excess of 21,000.[42] General Currie had resisted the move to triangularization, which had been implemented in the rest of the BEF in January 1918.[43] The attrition of allied manpower throughout 1916 and 1917 had left the British Divisions in the field, "hard pressed for men."[44] The solution was to reduce each brigade by one battalion so that at least on paper, the BEF could field the same number of divisions. Triangularization was significant as it somewhat eroded the logistic resiliency of Imperial formations by thinning out human resources and equipment. Currie's philosophy with regards to this thinning out process was in complete contrast to the Imperial plan:

The proposal was also put up to the Canadians, with the suggestion that the battalions thus freed might serve as the basis for two new divisions. General Currie, however, preferred to retain the old organization. He took the view that four strong divisions would be more effective than six weak ones.[45]

Additionally, Currie had seized the opportunity of the break up of the Fifth Canadian Division to over-man the four blooded divisions of the Canadian Corps. Beefing up the four divisions rather than stretching to field a fifth increased the punch of a formation already infused with structural redundancy.[46] The Canadian Corps Headquarters also dwarfed its British counterparts in terms of logistics functionality:

Two additional Mechanical Transport Companies gave it approximately 100 more trucks than a British Corps, thereby facilitating greater inherent mobility…The Corps maintenance organization was similarly much larger than anything other Imperial Corps had to work with…A British Corps possessed only one Medium Ordnance Mobile Workshop, while the Canadian Corps had two…the Canadian Corps had a distinct quantitative advantage over its British counterpart.[47]

This meant that in terms of general transport and repair the Canadian Corps had more CSS capability. There was a measure of both combat and logistics resiliency built into the Corps that enabled it to absorb the sustainment demands of the Hundred Days.

Canadian Corps staff planners recognized that greater freedom of action in the area of general transport was required. They had discovered through 1917 the unquenchable thirst of the industrialized battlefield for empty trucks. In an attempt to increase lift within available resources, Corps logistics structures were re-organized on 14 April

1918 with the intent of gaining more task vehicles from a more efficient structure. The Canadian Corps Supply Column and the Canadian Corps Ammunition Park—two distinct Corps level units—were fused into the Headquarters Canadian Corps Mechanical Transport (MT) Column. This new unit acted as the headquarters for five new subordinate MT companies. Similar to the amalgamation at their Column Headquarters, the respective Divisional Ammunition Parks and Divisional Supply Columns supporting each of the four divisions were amalgamated to form four new divisional MT companies.[48] The MT companies were responsible to act as the extension of the railway and deliver combat supplies forward to the organic trains of their respective divisions. In this manner, the Corps planners achieved a pooling of some precious excess lift.[49] The intent of generating more general lift capability was valid, but in practice it had a negative effect from the divisional perspective at Amiens:

Solving the sustainment issue engendered some creative thinking. The Amiens planners were fully cognizant that survivability of CSS assets was also a large factor in realizing offensive success

All things considered, it cannot be said that the Mechanical Transport worked efficiently. From the ammunition point of view it was a constant source of worry…The Mechanical Transport was recently re-organized. The organization formerly consisted of 1 Divisional Supply Column and 1 Ammunition Sub-Park. These were merged into the present [1st Division] M.T. Coy—excellent no doubt on the grounds of economy but very detrimental…We certainly found it did not work during our advance…[50]

As previously noted, the Canadian Corps, the small national army within the BEF, had more MT companies than other Corps. Furthermore, the Canadian Corps benefited from the fact that nearly all corps level transport was motorized, a quality not shared by other Imperial formations.[51] Even with qualitative and quantitative advantages, the divisional QMGs found that their Corps was still short of transport. They knew in 1918 that motorized flexibility and empty task vehicles were critical to sustain a more fluid open style of warfare.[52] Even though the effort to generate more general lift capability fell short, the initiative was significant as it indicated vibrant CSS experimentation based on thought and experience.

Any sort of offensive breakout on the Western Front was a new challenge to the senior leadership of the BEF. Solving the sustainment issue engendered some creative thinking. The Amiens planners were fully cognizant that survivability of CSS assets was also a large factor in realizing offensive success. At Amiens, some Mark IV tanks were used in a supply role as recorded in the War Diary of the 1st Canadian Division: "In order to supply the troops during the attack of August 8th and 9th, it was proposed to allot the Division six 'Mark V' (sic) Supply Tanks capable of carrying 8 tons each and going at a rate of 2 miles per hour."[53] Six supply tanks were assigned to each lead division and meticulous load lists were developed for them. As noted by the skeptical tone of the Divisional QMG, the true contribution of the supply tanks at Amiens is probably restricted to the domain of the psychological:

They were of old Mark IV Type, very slow traveling, and of limited carrying capacity. From the purely carrying point of view, it is considered that a well organized and efficient Pack Mule Coy, or a Tump line party could have given them a start and then arrived several hours before them…If tanks are to be employed again for this purpose, it is strongly recommended that the Mark V be used. They are much speedier…[54]

Even though the low maximum speed and limited payload of the Mark IV tank eroded its positive contribution, its use in a pure sustainment role is profound. Logistics planners groping to sustain the first glimmers of offensive success in the modern era were dead accurate with their deductions. Increased mobility, speed and survivability were essential characteristics for the logistics unit on the modern battlefield. Canadian sustainment thinkers dealing with an asymmetric and non-contiguous battlefield could profit from an examination of these nascent attempts to increase logistics survivability.

Six-mule team drawing ammunition on a light railway track nerar Petit Vimy, France, Aptril 1917.

Finally, there was a great deal of effort on the part of General Currie and the Canadian Government to keep the Canadian Corps together as a fighting formation.[55] This desire served to develop cohesion and affiliation among the various staffs and units of the formation. British Corps, in contrast, did not retain divisions.[56] They were shuffled in and out of different Corps regularly. The ability of the Canadian Corps to retain its subordinate formations not only led to cohesion and ease of planning but also the often-underrated logistics principle of affiliation. Affiliation can seem trivial at first glance; however it leads to trust and efficiency when the friction of combat raises the spectre of logistics doubt in the mind of the fighting echelon. Like old hockey line mates who, through familiarity and respect, can take their level of play to a higher level, affiliation or a sense of team enabled the Canadian Corps to generate combat power with finesse. Ian McCulloch juxtaposes the advantages of Canadian affiliation against the more modular British concept as follows:

The homogeneity of the Canadian divisions, 'was a great advantage…they always operated together under a corps commander and staff whom they could trust and whose methods and abilities they knew and understood. In contrast, British divisions moved about from one corps to another, and sometimes suffered from misunderstandings arising from different…administrative practices in the different corps….[57]

There are fewer questions that need to be asked between staffs and between line commanders in a formation that is well affiliated. Similarly, there are fewer points of clarification, fewer prompts engendered by unfamiliarity with technique. As a result, battle procedure times can be compressed and the physical act of sustainment is conducted more effectively between units that know and trust each other implicitly. The rarified environment of combat binds the supported to the supporting in a fashion that cannot be approached by any number of meetings and conferences and the Canadians were sage to maximize this benefit. Close affiliation, in tandem with redundancy of both structure and mobility assets were invaluable components in sustaining the Canadian Corps through the Hundred Days.

Conclusion

The Canadian Army historian Colonel C.P. Stacey who stated that, "creation of the Canadian Corps was the greatest thing Canada had ever done," probably would agree that the Canadian Army's greatest logistic achievements to date came in the sustainment of that Corps, particularly during the Hundred Days.[58] The historical record shows that Canadians were once among the very best in terms of developing sustainment practices. There are four central reasons for the Canadian Corps' logistic prowess that suggest that doctrinal success is not beyond Canada.

First, field commanders in and around the Corps were engaged and interested in their logistics. As early as 1916, they noticed defects in the sustainment structures at both army group and corps level. Through strength of personality, they effected change in logistic practices even though the standing doctrine of the day gave "tacit approval of commanders disassociating themselves from administration."[59] At Haig's insistence, the strategic sustainment structure was fully re-organized in a logical manner that could provide the correct volumes of materiel. Byng, vested with an appreciation of logistics in his formative years, was instrumental in strengthening the Q staff and overall logistic dexterity of the Canadian Corps for the offensive of 1918.

Second, the Corps was assisted in overcoming the sustainment complexity of offensive success by virtue of its robust size. Lieutenant-General Currie built most successfully upon the fine formation he inherited from Byng with his preference for redundancy in terms of assets and structure. His decisions to resist triangularization in 1918 and then overstock the fighting echelons of the four Canadian divisions in France with the soldiers from the disbanded 5th Canadian Division helped generate CSS flexibility as well as absorb the punishment of fighting three major battles in one hundred days.

Third, the Canadian Corps had a proactive appreciation of general transport on the battlefield. The requirement for speed, mobility, and survivability of logistic assets was well engrained. Early attempts were made to address the requirement for lift by maintaining additional transport companies at the corps level. These extra assets were

also fully mechanized, a qualitative feature rare among British Corps. The amalgamation of the corps' ammunition and supply chain in April 1918 was done with the intent of deriving even more transport from finite amounts of corps vehicles. Finally, the debut of a supply tank at Amiens demonstrated an early understanding of commensurate mobility and survivability to support and advance.

Last but not least, the Canadian Corps was an example of superb affiliation. It was like no other BEF corps in terms of its *esprit de corps* and cohesion. Canadian divisions stayed in the Corps and fought within it like a small national army. Other British corps did not enjoy this level of stability and divisions were passed between corps regularly. The result was one of trust and finesse between the supported and the supporting in the punishing campaign that ended the war. It is clear that Canada's 'pocket' Army was part of the cutting edge of CSS innovation in 1918.

About the Author...

LCol John Conrad is an Army Logistics Officer who has spent most of his field time with 1 Service Battalion in the Army of the West. LCol Conrad has also served shorter postings in LFAA, LFCA and the Directorate of Army Doctrine in Kingston. He is a graduate of the Royal Military College of Canada (1987) and holds a Masters Degree in Defence Studies from the same institution (2004). His operational experience includes seven months with UNTAC in Cambodia, 1993 and six months with SFOR in North West Bosnia in year 2000. He is currently the G4 of LFCA and will assume command of 1 Service Battalion during APS 2005.

Endnotes

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2. Shane Schreiber, *Shock Army of the British Empire: The Canadian Corps in the Last 100 Days of the Great War* (New York: Praeger, 1997), 2.
3. Norm Christie, *For King and Empire. The Canadians at Cambrai September-October 1918* (Nepean: CEF Books, 1997), 1.
4. John A. English. *Lament for An Army. The Decline of Canadian Military Professionalism* (Toronto: Irwin Publishing, 1998), 18.
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7. G.F.G. Stanley, Canada's Soldiers. *The Military History of an Unmilitary People* (Toronto: Macmillan, 1960), 1.
8. Ian Malcolm Brown, *British Logistics on the Western Front 1914-1919* (Westport: Praeger, 1998) , 139.
9. Malcolm Brown, *British Logisitics…*, 110.
10. Malcolm Brown, *British Logistics…*, 47.
11. *Ibid*, 47.
12. *Ibid*, 47.
13. English, *Lament for an Army…*, 16.
14. Schreiber, *Shock Army…*, 38.
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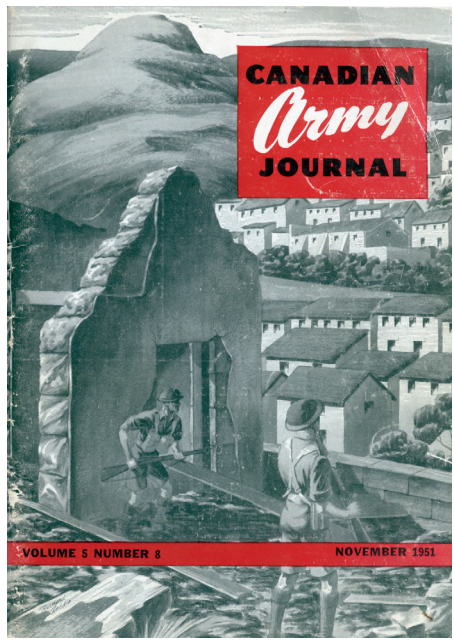
17. Gervais Phillips, *Haig; A Great Captain*, http//www.lib.byu.edu/-rdh/wwi/comment/haig1.html.
18. Gary Campbell, *Getting to the Root of the Matter. The Mobilization of British Army Logistics for the First World War*. An unpublished paper submitted to Dr David Charters as part of the War Studies Program at RMC, 1999.
19. Peter Wilson, ed, Canadian *Railway Troops During World War I, 1st Battalion Canadian Overseas Construction Corps, November 1917-April 1918* Volume One (Campbellford: Wilson's Publishing Company, 1995), 5.
20. Warren, *Wait For the Waggon…*, 104.
21. Malcom Brown, *British Logistics…*, 142.

22. C/JC/CPT 303/LE-30. Canadian Forces College lecture on Theatre Level Administration.
23. Malcom Brown, *British Logistics*…, 146. 100, 000 tons of this figure were available in France (timber and roadstone for the most part). The delta, some 190, 000 tons would need to flow through the strategic replenishment system.
24. Malcolm Brown, *British Logistics*…, 141.
25. LCol Ian McCulloch, *A Study in Operational Command: Byng and the Canadian Corps* in Allan English's *The Changing Face of War* (Montreal &Kingston: McGill-Queen's University Press, 1998), 52.
26. *Ibid*, 56.
27. McCulloch, *Study in Operational Command*…, 54.
28. Arnold Warren, *Wait for the Waggon*…, 19. General Buller was a highly respected combat arms officer in his own right. Upon appointment as the British Army's Quartermaster General in 1887, Buller sought to solidify the transportation service of the British Army in his proposal for a fully combatant transportation arm—the Army Service Corps.
29. Jeffrey Williams, *Byng of Vimy* (London: Leo Cooper, 1983), 36. The author is also indebted to Dr Chris Madsen of the Canadian Forces College for the background information on the primacy of LOCs in the Boer conflict and Byng's familiarity with their criticality.
30. *Ibid* 146 .
31. *Ibid*, 128. This practice served to enhance cohesion as the brigades and divisions knew the staff officers that rose to these positions. As Williams alludes in this work, there is always a distrust of the staff far away from the fight, however this distrust is mitigated when a familiar face can be attributed to the staff officer behind.
32. *Ibid*, 131.
33. *Ibid*, 147.
34. English, *Lament for an Army*…, 18.
35. Schreiber, *Shock Army*…, 4.
36. Schreiber, *Shock Army*…, 38.
37. 1st Canadian Division War Diary, Report on Amiens Operations August 8 to 20th Inclusive, 1918, RG9, Series III-d-2. Canadian War Diaries.
38. 4th Canadian Division, 3 August 1918. RG9, Series III-d-2. Canadian War Diaries.
39. Schreiber, *Shock Army*..., 37.
40. "Notes on Amiens Operations, Canadian Corps 'Q', dated 14 September, 1918," RG9, Series III-d-2. Canadian War Diaries, p. 2.
41. Schreiber, *Shock Army*…, 39.
42. Schreiber, *Shock Army*…, 21.
43. Schreiber, *Shock Army*…, 21.
44. G.F.G. Stanley, *Canada's Soldiers*…, 328.
45. *Ibid*, 329. It has been said that quantity has a quality all its own. This tongue-in-cheek axiom would appear to apply to the Canadian Corps.
46. English, *Lament For an Army*…, 17.
47. Schreiber, *Shock Army*…, 22.
48. The resulting new Corps units were 1,2, 3 and 4 Division MT Company as well as HQ MT Company for the support of Corps Troops.
49. Warren, *Wait for the Waggon*…, 110.
50. 1st Canadian Division War Diary, Report on Amiens Operations August 8 to 20th Inclusive, RG9, Series III-d-2. Canadian War Diaries.
51. Schreiber, *Shock Army*…, 38.
52. *Ibid*, 31.
53. 1st Canadian Division War Diary, Report on Amiens Operations August 8 to 20th Inclusive. RG9, Series III-d-2. Canadian War Diaries, 19.
54. Ibid, 18.
55. Schreiber, *Shock Army*…, 26. See also English, *Lament for an Army*…, 16, for comments on sterling Government support for the Canadian Corps and the benefit of maintaining the Corps as one.
56. McCulloch, *Study in Operational Command*…, 56.
57. *Ibid*, 56.
58. McCulloch, *Study in Operational Command*…, 238.
59. Malcolm Brown, *British Logistics*…, 110.

NOTE TO FILE—THE CANADIAN ARMY AND ITS JOURNALS

One of the hallmarks of any military institution is its professional journal. It serves to communicate and challenge ideas within its own rank and file, and perhaps more importantly, it also acts as a calling card to those outside the institution with an interest in following its affairs closely. In essence, an institution's journal is a simple yet critical component in ensuring its overall health, longevity, and measured evolution.



The original Canadian Army Journal

The Canadian Army has enjoyed a lengthy association with professional journals, but it has not always had the privilege of producing a publication entirely of its own. The original *Canadian Army Journal* was published from 1947 to 1964, after which the long running *Sentinel* magazine replaced it and other service journals.

For the next several decades, Canadian Army issues were covered in a number of defence related publications including the *Canadian Defence Quarterly, Defence Forum*, and a number of branch journals. Most of these publications shut down after the end of the Cold War, and it was not until 1998 that the Canadian Army once again instituted a dedicated publication, *The Canadian Army Doctrine and Training Bulletin*, for the professional discussion of Army issues.

After six highly successful volumes, the *Canadian Army Doctrine and Training Bulletin* underwent further evolution, and beginning with Volume 7.1 transformed into the *Canadian Army Journal*. After nearly a half century, the Army's core publication had returned to its original title and scope.

Sporting a new size and format, the revised *Canadian Army Journal* resembled less a pure doctrine and training update (an area already well covered by the Army Lessons Learned Centre) and more a professional forum for new ideas and debate similar to the army journals of our allies.

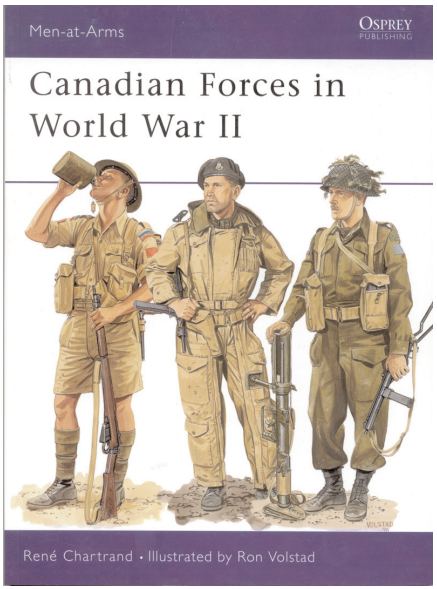
Continuing the modernization of the *Canadian Army Journal*, the publication of Volume 8 was accompanied by a completely new website (www.army.forces.gc.ca/caj/). Recognizing and acknowledging the importance of the electronic medium as a means to communicate with the Army, the *Journal* is now publicly accessible through the Internet in addition to its traditional hardcopy form.

— BOOK REVIEWS —

CANADA'S FORCES IN WORLD WAR II

Chartrand, René. Canadian Forces in World War II. Men-at-Arms 359. Oxford: Osprey Publishing, 2001. 48 pages.

Reviewed by Mr. Robert L. Boyer, MA



For those unfamiliar with Osprey Publishing, it is a UK based publisher that specializes in titles on military history. Founded in 1968, Osprey has now over 1000 titles in print divided into 17 thematic series. These range from "Aircraft of the Aces" to "Campaign" and "Essential Histories", to "Modelling Masterclass" for those interested by the hobby of plastic kit building. Historical periods covered range from the ancient world to modern times. *Canadian Forces in World War II* is part of the "Men-at-Arms" series (by far the largest with 424 titles), which provides information on the uniforms, equipment, history and organisation of military forces. Osprey publications are distinguished by relatively short page counts, that range from as few as 48 to as many as one 128 pages depending on the series.

The author, Canadian René Chartrand has written extensively-thirty-six titles-for Osprey, mainly on 18th and 19th century warfare, and this title is his only departure from those two periods. He is also the author of two volumes of the Canadian Military Heritage series published by Vanwell. Chartrand was a senior curator with Canada's Historic Sites, and is now a consultant and freelance writer. The book's illustrations of the various uniforms worn by the Canadian forces in World War II are the work of Canadian artist Ron Volstad.

Essentially a primer, *Canadian Forces in World War II* begins with a four-page summary of Canada's participation in World War II, from the pre-war lean years to the final end state of over a million men and women in uniform by 1945. Chartrand stresses the extraordinary effort undertaken by the government and industry to gear up Canada for the challenges of a world war. He provides some interesting tidbits, such as a table of Canadian World War II statistics (population, enlistment numbers, war production, etc.) and a detailed order of battle of Canadian Army units. This section concludes with a short chronology of major Canadian military events, with a heavy bias towards the ground war.

Following, there is a succinct description of the basic organisational structure of the Canadian Army (corps and divisions) and two very interesting sections on the sometimes neglected Home Service units: the Veterans' Guard of Canada (VGC) and

the Pacific Coast Militia Rangers (PCMR). After the obligatory description of the tasks and missions assigned to those units, the author dedicates half a page to a detailed description of the uniform, head-dress, shoulder flashes, and weapons of the PCMR. At this point, one would reasonably expect an accompanying illustration as it seems that the PCMR had a very distinct appearance compared to the rest of Canada's land forces. None are to be found either in picture form or in the colour illustrations. This omission is a strange oversight in a book whose stated purpose is to provide the reader with what "it looked like".

The core of each Osprey "Men-at-Arms" publication is its uniform descriptions and colour plates illustrations. Predictably, the majority of the book is dedicated this purpose (pages 14 to 40, and pages 41 to 48 give an individual detailed description of each colour illustration). The author heavily favours the Army in terms of descriptions of the actual clothing, helmets, cloth headgear, footwear and accoutrements. He also provides a more thorough description (over seven pages) of the Army's procurement process. The reader might wish the same type of information had been provided for the Air Force and Navy. It is interesting to note that although it followed Britain's lead, when it suited its purpose Canada adapted its own modifications to and versions of the various uniforms. The accompanying artwork is clean and crisp (pages 25-32) with each plate clearly showing a typical example of one uniform for each service during one period of the war. Examples include Private, PPCLI, UK, December 1939 and Flight Lieutenant fighter pilot, RCAF, NW Europe, late 1944.

As mentioned, less space is given to the two other services. The Royal Canadian Air Force (RCAF) is allotted five pages, while the Royal Canadian Navy (RCN) is given three pages. These page counts include service related history and descriptions of uniforms and equipment. Accordingly, they are rather scarce on details. They are, however, good short summaries and would provide a starting point for additional reading. Again, the artwork by Ron Volstad is clean and crisp. The publication concludes with a short section on the role of Canadian Women's Services (with accompanying colour illustrations) and the contribution of Newfoundland (still a British colony in 1939) in World War II. A bibliography for further reading is provided. The works listed tend to stick to the "official" side of history, with titles by C.P. Stacey for example. Works by authors such as Jack English or Terry Copp are not listed in the bibliography.

Overall, *Canadian Forces in World War II* achieves its objective of providing a description of the uniforms, equipment and organisation of Canadian Forces in World War II. It is however, a bit thin on the history side. This last fact is not surprising considering the short page count. Accordingly, the book should be seen as a primer only. Also, this book does not stray into controversial territory, preferring a rather "official history" approach. If one wanted to know what name and number the pattern of Canadian webbing in World War II had, quickly and without consulting multiple sources this book would be the first this reviewer would reach for.

SPEED AND POWER: TOWARD AN EXPEDITIONARY ARMY

Eric Peltz, John M. Halliday and Aimee Bower. Santa Monica: Rand Arroyo Centre, 2003. ISBN 0-8330-3478-2. Softcover, 83 pages.

PREPARING FOR FUTURE WARFARE WITH ADVANCED TECHNOLOGIES: PRIORITIZING THE NEXT GENERATION OF CAPABILITIES

John Matsumura, Randall Steeb, John Gordon IV, Paul Steinberg. Santa Monica: Rand Arroyo Centre 2002. Issue Paper 215-A. Softcover, 20 pages.

Reviewed by Major J.C. Stone, CD, Ph.D.

Speed and Power is a Rand study that examines the issue of how the army might improve its ability to contribute to the United States' global power projection capability when time is a critical factor. The underlying reason for conducting the study is linked to the Army's goal of deploying its brigade sized future force (not expected to be operational until 2012) within 96 hours. In order to help improve response capabilities between now and 2012 the Army will deploy the Stryker Brigade Combat Team (SBCT). Although less capable and somewhat heavier than the expected future force, the SBCT is significantly lighter than the armoured heavy forces. At the same time, SBCT offers more firepower, protection and tactical mobility than the light infantry forces. In order to begin generating lessons that can be utilized for the future force, the authors use the SBCT as a case study to examine two components of early-entry force strategic responsiveness: how to improve the deployment time to a crisis and how to rapidly tailor a mission focused force package.

First, the authors address the issue of how quickly the SBCT can be deployed from continental United States to a crisis with particular emphasis on how to improve the value of the SBCT deployment. In this part of the study the deployment time is analyzed from the perspective of how much has to be moved, how much can be moved per unit of time and how far and over what route the units need to be moved. Two key findings emerge from this analysis. The actual availability of space at the final destination is significant in determining how fast a force can be deployed regardless of the number of planes available. In other words, if there is only room for one aircraft at the point of entry the deployment time will be limited to how fast the plane can be unloaded and sent on its way. At the same time, the longer the distance to be traveled, the greater likelihood that aircraft availability and bottlenecks in the airflow will increase the actual deployment time, regardless of the amount of space available at the point of entry.

The second issue examined by the authors concerns the actual capabilities within the SBCT. The intent of this part of the study is to determine if new organizational design concepts can improve the actual combat power of the force while at the same time decreasing the size of the force. This accomplishment would help reduce the deployment time and airlift requirements. The authors conclude that new technologies should allow the development of better building blocks of capabilities, both horizontal and vertical, which will allow joint planners to quickly analyze the force package options needed to meet the mission. The advantage of having this menu of capability packages, with the detailed airlift and movement planning information

already available, is that response time will be reduced while maintaining or increasing available combat power upon arrival in the operational theatre.

Preparing For Future Warfare With Advanced Technologies is a short Rand Issue Paper that discusses the capabilities that are essential for the future and develops ideas on how those capabilities should be prioritized. Using a scenario that is based on the experiences from Operation Allied Force in Kosovo in 1999, the authors evaluate how prioritizing capabilities in three different ways might play out in a small-scale contingency operation in the 2015 timeframe. The three capabilities examined in the paper are remote fires, rapidly deployable ground forces and a joint capability that integrates the two.

The authors begin the discussion of the three options by briefly discussing the improvements in effectiveness that are expected between now and 2015. Each of the capabilities is examined using a high-resolution simulation that explores different attack options. The study evaluates the effectiveness of each option by measuring the objective accomplishment, the loss exchange ratio, the loss of friendly forces and the loss on noncombatants. The end result of the simulations is that predicted increases in remote fires effectiveness will not change the basic problem of engaging mobile tactical targets from afar. Some non-combatant losses will still occur. On the other hand, a rapidly deploying ground force will achieve the objective much faster than the remote fires option but will suffer some friendly force casualties. Not surprisingly, the combination of the two capabilities provides the best results. The policy dilemma will involve finding the correct trade-off between reducing friendly force losses and causing more non-combatant losses. Clearly, the challenge in the future security environment will be the need to ensure forces are designed to be sufficiently robust to respond to a wide variety of situations while having the capability to meet the public's demand for reduced casualties, both friendly and collateral.

There is, of course, a connection between these two Rand studies. Both studies examine issues that deal with military capabilities and force structure options for the future. This is a very timely and relevant subject for the Canadian Forces and the Army in particular. As it continues to transform, the Army's future force structures will utilize vehicles with similar light armoured vehicle (LAV) configurations and capabilities. It will be prudent for members of the Army to be familiar with lessons such as the ones provided in these and similar studies by Rand. The Rand website at www.rand.org is a very useful resource for accessing information like that found in these studies.

STREET SMART: INTELLIGENCE PREPARATION OF THE BATTLEFIELD FOR URBAN OPERATIONS

Medby, Jamison Jo, and Russell W. Glenn, RAND Corporation, 2002.

Reviewed by Lieutenant-Colonel R.S. Williams, CD

The stated purpose of this highly readable monograph is to discuss how the U.S. Army's intelligence preparation of the battlefield (IPB) process should be adapted for military operations on urbanized terrain (MOUT). Given the current U.S. focus on the operations in Iraqi urban environments as part of Operation Iraqi Freedom (OIF), the

timeliness and relevance of this RAND publication should not be in question. If there was any residual doubt as to the monograph's relevance for the Canadian military, Canada's deployment to Afghanistan (Operation ATHENA), and in particular in the Kabul area of operations, should suffice as justification.

One of the premises of this work is that the ubiquity of urban terrain will ensure that the U.S. Army will continue to be called upon to operate in villages, towns and cities. In so doing they will almost certainly be faced with the by now oft-quoted General Krulak's *three-block war*. Amongst the many challenges that face the Army in the urban environment is the difficulty in figuring out what exactly is going on. This question, though seemingly simple, requires an answer that is more often than not quite complex. The authors propose IPB as an already available tool that can be adapted to solve this problem.

While the intelligence requirements related to infrastructure pose an obvious challenge as to the level and scope of detail required, describing the effects of the civilian population can be even more complex and multi-faceted, involving many cultural and religious dimensions that may not be readily apparent and are perhaps even temporal. It is for this reason the authors argue, and I concur, that the accurate and detailed description of the effects of the population is essential to the understanding of the threat. The unique challenges posed by an urban environment vis-à-vis underlying terrain, buildings, infrastructure and people are described in very clear terms in *Street Smart*, providing excellent food for thought for the reader early on.

The monograph provides a good overview of the four steps of the doctrinal IPB process currently being used by the US military and is followed by individual chapters related to the each of the various steps of IPB related to the urban environment. In this way the authors provide a methodical checklist of sorts and sample matrices to assist those unfamiliar with either the IPB process or urban operations. Though not intended to be all-inclusive, situational adaptation of the various topics and the fashion with which they are dealt should enable effective IPB to be conducted.

The authors conclude with a number of sound recommendations including the very insightful conclusion that although the IPB process is already well suited to the purpose of analyzing and describing the urban environment, it is necessary that IPB tools and techniques be adapted further to fully address urban complexities. This would ensure that the vast amount of information presented is organized and analyzed in a way that avoids overwhelming intelligence and command staffs.

The extensive bibliography within *Street Smart* is replete with articles on more recent operations in Chechnya, the Balkans and Somalia, historical operations including Stalingrad and Beirut, as well as the usual gambit of relevant and pertinent military and technical reports: Joint, U.S. Army and U.S.M.C. (Marine Corps Intelligence Activity—M.C.I.A.). If unaware of the current body of doctrinal publications, readers can certainly avail themselves of this detailed and useful body of methodical military publications to either help explain the use of IPB in the urban environment or to help clarify the logic and methodology described by the authors.

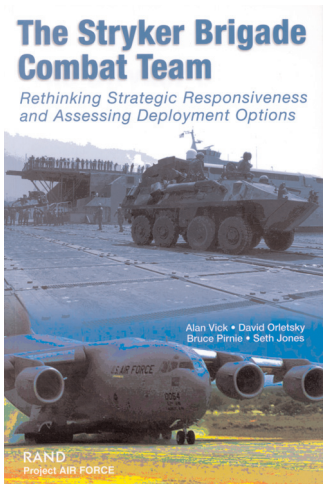
I would highly recommend *Street Smart* to both the military intelligence professional and anyone interested or involved with operations in urban terrain. This monograph

is a very useful aide-de-memoire that should be read and digested well before any potential IPB users find themselves inside the urban environment of intelligence interest. Familiarity with the methodologies covered (including their practical use) coupled with the refining of one's own matrices and check-lists will save valuable time when there simply isn't enough of it. For the non-IPB practitioner, the monograph does an excellent job of describing just how complex the task of urban IPB can actually be, something that armchair generals may be apt to ignore when a critical detail is missed or misunderstood, but about which they are either reluctant or unable to offer possible solutions.

THE STRYKER BRIGADE COMBAT TEAM: RETHINKING STRATEGIC RESPONSIVENESS AND ASSESSING DEPLOYMENT OPTIONS

By Vick, Alan, et al (Santa Monica, CA: RAND Project Air Force) 143 pages. $22.00 (paperback)

Reviewed by Lieutenant-Colonel Dave Galea, CD



In accordance with the vision of the former U.S. Army Chief of Staff, General Shinseki, the U.S. Army is in the process of transforming its land forces into a decisive, medium weight force that is more strategically responsive than Cold War heavy and light legacy forces, yet with sufficient combat power to fight and win in full spectrum, warfighting operations. Strategic mobility is sought for these forces to enable the U.S. Army to cease its forward basing of forces in favour of continental United States (CONUS) basing of forces for deployment as required. First in the evolution is the Stryker Brigade Combat Team (SBCT), sometimes referred to as the Interim Force, to be followed closely by the transformation of the entire Army over the next 20 years into the Objective Force. The Objective Force will combine the deployability of light forces with the lethality, tactical mobility and survivability of heavy forces. Both the SBCT and the Objective Force are expected to deploy a brigade anywhere in the world in 96 hours, a division in 120 hours and place five divisions on the ground within 30 days. *The Stryker Brigade Combat Team: Rethinking Strategic Responsiveness and Assessing Deployment Options* represents the results of a study commissioned by the U.S. Air Force in which the RAND Corporation seeks to determine if the Air Force is capable of supporting the Army's ambitious timelines for global deployability.

This relatively brief study covers a considerable amount of ground by looking the many factors which affect strategic deployability including the planning considerations for air and sea deployments, U.S. strategic decision making and how it impacts deployments and a brief look at the various regions of interest from a U.S. perspective in order to determine where future operations might take place. While the actual study was conducted in 2001 it remains as relevant today as the day it was released.

The Interim Force, now referred to as the SBCT, is built around the Stryker (General Dynamics LAV) medium weight, wheeled family of vehicles with a combat brigade's initial deployment requirements comprising some 3494 personnel, approximately 1000 vehicles and three days sustainment (not including fuel or water) together representing some 15 340 short tons to be moved. It should be noted that the statistics used by the study were a snapshot in time and that the SBCT has since expanded both in terms of personnel and tonnage further exacerbating the problem. The Objective Force movement problem is expected to be similar to the SBCT with plans to equip this force with a medium weight tank referred to as the Future Combat System (FCS).

The study first looks at the deployment of the SBCT by air as conceptualized by the U.S. Army. Fully addressing the numerous factors that affect an airlift operation and providing the detail of a 'Class A' movement staff check the authors conclude that the 96-hour window is unachievable by air. From the CONUS they conclude that it would take nine days to deploy the SBCT to Bogota, Columbia, 14 days to South America and Europe, 12-21 days to Africa and more than 13 days to Asia. Worst case, it would take 21 days to airlift the SBCT to Kandahar, Afghanistan. Surprisingly, the authors demonstrate that just throwing more airlift assets at the problem cannot resolve the issue. More often than not the limiting factor in an airlift operation is the infrastructure at the arrival airfield(s). The authors then look at the logical alternative, deployment by sea from the CONUS, in some detail. The discussion of sea deployment covers all relevant factors including current and projected sea lift assets, departure and arrival ports/harbours, ship loading and unloading operations, road movement from the port of entry (POE) to the area of operations, etc. There is an excellent description of how a RRDF (Roll-on/roll-off discharge facility) and lighterage can be used to overcome poor arrival port facilities by unloading the SBCT onto what amounts to a floating pier off the coast as an intermediate step to get the SBCT ashore. Not surprisingly, like airlift, sealift cannot meet the 96-hour window. Three illustrative examples are provided for sea lifting the SBCT: to Kosovo, Rwanda and Indonesia requiring 15.1, 28.9 and 13.7 days respectively. Note that the long time requirement for Rwanda is due to the time required for a 1,500 km road move from the POE. Having completed this analysis the authors conclude that in general, deep interior deployments favour airlift and littoral scenarios favour sealift, but that neither airlift nor sealift will meet the strategic 96-hour deployment requirement. The best that can be achieved, through what they refer to as "some mobility enhancements," is deployment to key regions by air or sea in a period of 5 to 14 days. The mobility enhancements suggested amount to what the U.S. Army developed the SBCT/Objective Force concept to avoid - the forward basing of units and/or equipment. Specifically, the authors propose a combination of CONUS bases (particularly Fort Polk in Louisiana), an SBCT forward-base in Germany and regional preposition sites in Guam and Diego Garcia.

Having reached these conclusions regarding air and sea lift the authors then assess the impact that these conclusions might have on the U.S. ability to respond world wide. They conduct an analysis of the U.S. regions of interest past and present, including a historical look at where large joint operations have taken place in the past. These operations have been concentrated in only a few regions of the world: Europe, Latin America, the Persian Gulf and Asia, thus allowing the focusing of planning on these regions for the future. Further, these operations, including WW II, Korea, Vietnam,

Desert Shield/Desert Storm, etc. have been conducted in the littorals, normally not exceeding 600-700 km inland. The authors acknowledge the uncertainty of the impact of the war on terror, citing recent exceptions where operations were conducted outside the littoral, e.g. Afghanistan. They dismiss the impact of these anomalies stating that while there may be more exceptions in future, the predominance of littoral operations will likely hold, and that in any case light forces would likely be used to conduct operations outside the littoral.

The final piece to the puzzle is an informative, historical look at the U.S. government's decision cycle for committing troops to battle. The authors describe a build-up to war that generally follows the sequence of concern, urgent danger, a precipitating event(s) and deployment of forces. They indicate that the U.S. is seldom subject to strategic surprise and that more often than not the U.S. has the initiative in deciding the pace of response. Even when strategically surprised (e.g. Korea and Kuwait) the U.S. still had the luxury of setting the timeline. In the past the time taken to respond to a threat varied from days (Grenada, Libya, Panama, Kuwait) to weeks (Afghanistan) to months (Korea, Vietnam). The authors demonstrate that "past security challenges (such as those that led to Operation Just Cause in Panama) have usually developed over a time frame of months or years, allowing for prepositioning and other regional defensive measures that reduce the need for rapid deployment from CONUS." In reaching this conclusion the authors validate their proposal that the U.S. strategic deployment requirements could be met through a combination of CONUS and forward basing of SBCTs and/or equipment. Their overarching recommendation "that Air Force and Army leaders initiate a dialogue on these issues of mutual concern" is a bit unnerving in that it suggests that the U.S. Army has developed the SBCT/Objective Force concept, which forms the basis of Army transformation, in isolation from their supporting services and that an important tenet of transformation—strategic responsiveness—may not be possible to meet.

At 143 pages *The Stryker Brigade Combat Team: Rethinking Strategic Responsiveness and Assessing Deployment Options* is a concise summary of the strategic deployment factors that affect U.S. Army transformation. As the SBCT is remarkably similar to Canadian Medium Weight (LAV III) Brigade Groups and Battalions being developed in our own transformation, the study is directly applicable to the Canadian capability being developed. The study contains many observations and lessons to which Canadian Forces planners would do well to pay attention. This study is also an educational tool. The explanations for the government decision cycle to commit forces, historical look at world regions of interest and most specifically the planning factors and how to organise and conduct air and sealift operations would be equally beneficial to students studying both operations and logistics matters. *The Stryker Brigade Combat Team: Rethinking Strategic Responsiveness and Assessing Deployment Options* is a highly recommended read.

URBAN BATTLE FIELDS OF SOUTH ASIA LESSONS LEARNED FROM SRI LANKA, INDIA, AND PAKISTAN

C. Christine Fair, Santa Monica, CA: Rand Corporation, 2004. 150 pages.

Reviewed by Lieutenant-Colonel (Ret'd) Chuck Oliviero

This is a short paperback but a relatively easy read. It is a RAND report, which was a study sponsored by the US Army's Training and Doctrine Command (TRADOC) and perhaps because of this the report is brief, concise and ideally suited to the military reader looking for a better understanding of the asymmetric warfare in the three countries investigated, but not willing to wade through the type of 'psychobabble' too often found in academic studies. It is clearly written with no wasted prose while maintaining the necessary academic rigour. The bibliography is extensive, appears to be quite up to date and worth investigation by itself.

The inquiry is broken into three case studies:

♦ **Pakistan**. This case study focuses upon sectarian ethno nationalism and the Muttehida Quami Movement (MQM);

♦ **India**. This case study focuses upon Sikh militancy, particularly in the wake of the 1984 raid on the Golden Temple; and

♦ **Sri Lanka**. This case study focuses upon the Tamil insurgency.

The investigation explores the phenomenon of urban violence in the three subject countries of Sri Lanka, India and Pakistan. The author intentionally draws no distinction between terrorists and insurgents. This allows a broader net to be cast and avoids the usual etymological arguments that arise from defining groups too narrowly. The author has purposely only included sustained campaigns in order to draw some meaningful conclusions.

The methodology used by the author was threefold: extensive academic review; field research including trips to the studied countries; and personal interviews.

The stated aim of the survey was to identify key innovations employed by militants (yet another reason for only studying sustained campaigns—innovations take time). The premise was simple: urban terrain affords many advantages to groups engaged in organized violence.

There were a series of findings, not all of them startling, which the author grouped. Generally speaking, each of the three case studies found:

♦ That linkages were clear between militant insurgency organizations and organized crime;

♦ That the insurgents were adept at leveraging extensive global networks and diasporas to raise both funding and sympathy for their cause. In other words, these organizations understand information technology and information warfare;

- That all of them made extensive use of university campuses to recruit members;

- That good use was made of recruited and learned technical expertise in increasing the lethality of its weapons of choice, like suicide vests; and

- That the legitimate governments of all three of the studied states had difficulty developing effective counterstrategies:

    - Generally speaking the police in all three countries were key components to solving the problem but were widely unprepared, poorly trained and ill-equipped,

    - Of particular interest was the fact that intelligence was found to universally flow only downward. Government agencies sent what they knew down to the police but could not get the information to flow in both directions. This left police forces working with dated intelligence while leaving the national authorities in the dark regarding what officers at the lowest levels took for granted,

    - All three countries lacked proper forensic facilities. In an age where science has made great strides, none of these countries could afford to use the expensive technology that countries like Canada and the US now take for granted,

    - Unlike the insurgents, public relations campaigns, or information operations (IO), were poorly understood by the governments in all three countries. The use of information as a weapon against the insurgents was uniformly poorly executed, and

    - Coordination across state agencies, an issue to which even those in the First World could relate, was poor in all cases.

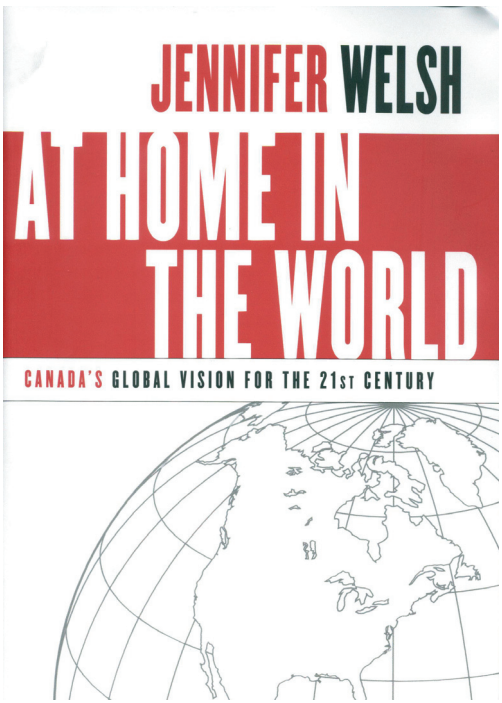
In summary, the study is well structured for the military reader. It is clearly written and reminiscent of a good training lecture; by page 9, for instance, the reader knows the aim, scope, study objectives, how these will be achieved and generally speaking, what the summary of the findings are. It is reminiscent of those 'lovely' lectures that we all enjoyed at the Canadian Forces Officer Candidate School!

The book is worth the read for any student of military theory or military studies interested in asymmetric urban warfare against insurgent enemies and at fewer than 200 pages it is something that can be taken on a train or plane trip.

AT HOME IN THE WORLD: CANADA'S GLOBAL VISION FOR THE 21ST CENTURY

By Jennifer Welsh (Toronto: HarperCollins Publishers Ltd, 2004.) 266 pages, $32.95

Reviewed by Mr. Philippe Lagassé



During the early months of 2005, the minority Liberal government of Prime Minister Paul Martin announced that Jennifer Welsh had been recruited to assist in rewriting Canada's long-delayed International Policy Review (IPR). In addition to her credentials as a former member of Department of Foreign Affairs policy planning staff, Welsh was likely chosen to work on the IRP as a result of the critical acclaim of her *At Home in the World*. Like Andrew Cohen's *While Canada Slept* and J.L. Granatstein's *Who Killed the Canadian Military?* the book was written for a wide audience. It is readable, provocative, and laden with interesting anecdotes. *At Home in the World*, however, lacks depth and precision. This is regrettable since Welsh makes a bold argument: Canadian policymakers, she recommends, should embrace a new approach to foreign policy, that of Canada as a 'model' global citizen. A foreign policy of model citizenship would cast Canada as a beacon of liberal democracy, human rights and international order and justice, encouraging other states to act in kind. Yet the book ultimately fails to prove the model citizen argument with the solid evidentiary foundation it needs to defy skeptics or justify an uprooting of traditional approaches to Canadian foreign affairs.

Welsh is at her best when dissecting Canada-United States relations and critiquing alternative policy approaches circulating in the foreign affairs community. Against those who assert that Canada is, and should be, the United States' best friend, *At Home in the World* demonstrates that the two North American neighbours have distinct identities, values and interests. In turn, these differences lead Canada and the United States to view the world and the North American partnership from divergent perspectives, a trend Welsh believes Canadians rightly want and demand. This position does not result from a simplistic anti-Americanism on Welsh's part. She is sympathetic towards the challenges Washington faces in a post-9-11 world. All she asks is that Canadian leaders maintain the primacy of Canadian interests and values when negotiating partnerships with the United States in North America and internationally. For instance, Welsh does not believe that Ottawa should tie overseas cooperation with the United States to a United Nations mandate. Instead she proposes that Canadian policymakers should

strive to convince the United States that America's long-term interests are better secured in a rule-based international system. Similarly, though she accepts that Canada's economic prosperity is grounded in strong continental trade and security links, Welsh deflates arguments for deeper North American integration, either in the form of a common currency or security perimeter.

Chapter five of *At Home in the World* exposes the weaknesses of a variety of Canadian foreign policy alternatives. Canadians' internationalist sentiments, ethnic makeup and interests preclude the adoption of an isolationist stance or a downgrading of foreign affairs to mere trade policy. Limited funds and other budget priorities make a return to the Golden Age of the 1950s and 1960s unrealistic. Welsh's treatment of Canada-United States relations, furthermore, illustrates why a focus on bettering ties with a declining superpower is imprudent and detrimental to Canadian interests and identity. Finally, Welsh rejects a 'soft power' emphasis because it overlooks the importance of capabilities and credibility in advancing values and ideas. The author hits the mark with each of these assessments.

Having explored the limits of the Canada-United States relationship and uncovered the flaws of other policy alternatives, Welsh begins her exposition of the merits of model global citizenship. It is at this point that *At Home in the World* abandons sound analysis in favor of speculation.

According to Welsh, Canada can effect change in the world by setting an example as a prototypical tolerant, inclusive, accepting liberal democracy. This does not mean that Canada should seek to impose its values on others. Canada, Welsh holds, should promote democracy, human rights and tolerance, but not actually fight for them: personifying them is enough. In being a model, Canada will prompt other states to better themselves. Likewise, by demonstrating self-restraint, solidarity and a respect for the international public good, Canada will compel other countries do the same. The key to Welsh's theory is that such model citizenship will result in a 'magnetic effect'. In projecting its values and respecting the common global good, Canada the model citizen will act as a catalyst for a better world.

At Home in the World is careful not to suggest that Canada is the model for all to follow. Canada will be at best a model. Nonetheless Welsh does posit that fulfilling this model citizen role is Canada's global destiny. Moreover, she offers scant evidence that model citizenship can accomplish its aims. Her book is remarkably silent about the success of previous model states. Without a better account of how acting like a model global citizen will actually spark change in the world, Welsh's recommendations ring hollow.

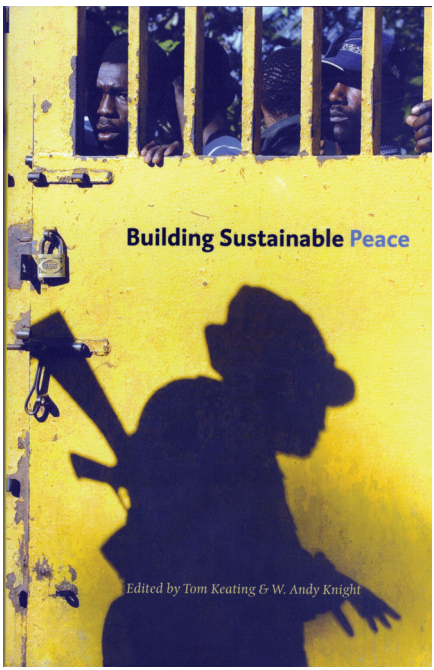
In the end, the reader should look to At Home in the World's fourth chapter to understand what fundamental change to Canadian foreign policy Welsh is attempting to bring about. Chapter four is Welsh's criticism of Canada as a middle power. She dislikes middle power theories because they encourage mediocrity in international affairs. Read in light of this chapter, her call for model citizenship is perhaps best understood as an effort to break Canadian foreign policy free from the complacency engendered by middle power foreign policies. Even if model citizenship is unlikely to bring about real change, it could at least spur Canadians to reexamine whether their attachment to the world is sufficiently expressed through current policies.

The practice of middle power politics has allowed Canada to be the tolerant, wealthy, relatively secure country Welsh so admires. Indeed, as she acknowledges, this prudent approach has been, and remains, essential to protecting Canadian interests in its bilateral relations with the United States. The question Welsh leaves unsatisfactorily answered is why this should be different for Canada's relations with the rest of the world.

BUILDING SUSTAINABLE PEACE

Tom Keating and W. Andy Knight, Eds., (Edmonton: University of Alberta Press, 2004)

Reviewed by Major J.R. McKay, Ph. D.



"Peacebuilding" is not an easy term for military personnel to accept. Upon hearing it, one's mind tends to conjure up images of very well meaning, naïve and zealously autonomous Non-Governmental Organizations (NGOs) trying to save the world single-handedly. The term "peacebuilding" appears to be related to conflict termination or post-conflict phases. This perception suggests that it has little to do with the military. Clearly, however, such clean separation between war and peace is more theoretical than realistic. The early 21st century appears to be dominated by the "Three Block War", in which a force may be required to engage in mid—to high—intensity combat, stability operations and humanitarian operations concurrently and sequentially. Such reality casts doubt on the utility of separating distinct activities.

The origins of *Building Sustainable Peace* explain why the definition is so ambiguous. The book is based on a University of Alberta symposium that occurred in March 2000.[1] It was funded from a number of sources, including the Canadian Centre for Foreign Policy Development, the John Humphrey Centre for Human Rights and the Department of National Defence Security and Defence Forum. The contributors included a range of academics from Canadian, American, British and South African universities, some United Nations(UN) employees, Canadian civil servants and politicians. The book was written for an academic audience.[2] This fact explains why the definition is so ambiguous, but does little to address the problem.

Different contributors described peacebuilding in different ways. The editors described it as both: "... a concept and a strategy..."[3] One of the contributors described it in more abstract terms by stating that it was: "…a twofold process of deconstructing the structures of violence, and constructing the structures of peace..."[4]

Another contributor stated that it was: "…a lengthy process of complex transformation of society, culture, politics and economics."[5] Senator Douglas Roche, O.C., the author of the foreword, stated that it was really about peace education, itself intended to generate mass behavioural change in order to prevent future conflict, to resolve it when it occurs peacefully, and: "…create the social conditions conducive to peace…"[6] The vague descriptions do not make the topic any clearer. From the varying definitions, peacebuilding appears to include a number of activities such as Disarmament, Demobilization and Reintegration, de-mining, the repatriation of displaced persons, legal reconstruction, the restoration of police services, the restoration of law and order, civil reconstruction and the development of governance and civil institutions[7]. In short, "peacebuilding" covers a lot of peace support operations (PSO)-related activity, but the central premise underlying each of the essays is that bad governance contributes to conflict. One of the contributors noted that the definition is flexible:

> *On the one hand, it seems that from a field perspective almost any project can be called a 'peacebuilding project'. On the other hand, from a donor and policy perspective, the label is typically applied to a narrow set of activities such as human rights projects security sector reform, democratic institution strengthening, public sector reform, and more nebulously, 'good governance' projects (typically focusing on government rather than civil society or the private sector or the relationships between the three entities.*[8]

The ambiguous definition allowed for the inclusion of essays focused on very specific topics, including humanitarian intervention, small arms and light weapons, and the role of women in peacebuilding.[9] While these issues are related, there is a danger in that these can be perceived as parochial, neo-colonial, and contradictory.

Like the definition, the contributions vary significantly in tone and quality of analysis. Some of the contributions come across as utopian and prescriptive. Some of the contributors appear to confuse analysis (an assessment of "what exists") with prescription (an assessment of "what ought to exist"). The foreword seems to be based on the rejection of the idea that security is based on capacity to wage violence. The author of the foreword states that: "A security defined in terms of human and ecological needs must replace the prevailing definition based on armaments, violent conflict and war. Adjusting to the new security paradigm will not be easy since the strategic interests of the major powers—fed by the military-industrial-scientific complex—are still the driving force in international relations."[10] Such language harkens to the peace movement of the 1960s. This is followed by the argument that: "The notion of building civil society rather than merely keeping a peace reflects a move away from conventional UN role towards new models better suited to an age when the emerging agenda of human security demands that peace not only be kept, but also sustained."[11] This statement could be interpreted as a call for benign colonialism. However, this notion is less extreme than the "peace tax" on military and defence spending by states to feed a "global peacebuilding fund" advocated by another contributor.[12] This is not an easy notion for a military member to consider, let alone accept. While the utopian nature of some of the contributions provides insight into

how some elements of the political and academic communities feel about the issues, it also made me want to reject the book's contents wholesale.

To give the impression that there is nothing of value in the book would be misleading. Some of the contributions are excellent and contain clear and frank analyses of particular issues of interest to students of international relations. For example, Jean Daudelin's essay on humanitarian intervention contrasts the complexity of the issue and the simplistic approach—based on the premise that impartiality is sacrosanct-taken by the international community through the UN. He points out that Canada ranks within the neo-idealist camp (i.e. Neo-Pearsonian), in which national interests are rejected in favour of global governance. Such a position permits interventions in favour of human rights.[13] He also argues that: "At the core of the interventionist logic is a challenge to sovereignty and an attempt to establish a rule of law that transcends national states to better protect their citizens. Hence the tendency to prefer a diverse UN mission to a more narrowly constituted coalition led by a regional middle power."[14] Daudelin argues that national interest and human rights need not be mutually exclusive, but idealistic middle powers have had a tendency to talk more than they can act upon, and hence the greater powers must be co-opted to enforce human rights in particular cases.[15] Kenneth Bush's paper provides a critical and incisive analysis of the relationship between peace support operations and peacebuilding. He argues that in post-conflict situations, the military should not be the focal point for all activity as peacebuilding is based on development with a security dimension as opposed to peace support operations where the reverse is true. Bush argues that a prolonged military presence can create a societal dependency whereas development activities are intended to create societal self-sufficiency.[16] This view is reinforced with his observation that NGO culture values autonomy as opposed to coordination. However, this argument is also weakened by Bush's endorsement of CARE Canada's sponsorship of a study recommending that NGOs should consider privatized security for humanitarian reasons.[17] Veterans of UNITAF or UNOSOM could testify to the dark side of such thinking—Somali "technicals". Another contributor, ex-Princess Patricia's Canadian Light Ifantry Officer, Christopher Ankersen discusses the relationship between the military and peacebuilding using Kosovo as a case study. He makes some incisive arguments, namely that international relations "systems" thinking has led some to attribute the existence of a system of humanitarian interventions to a crisis management process or a series of ad hoc responses.[18] He also discusses the effect of Operations Other Than War (OOTW) on military forces and the lack of comfort within many circles with such operations. Ankersen notes, however, that the academics and theorists were far more dogmatic than operational level commander.[19] Another essay, by Francis Kofi Abiew and Tom Keating, presents an excellent comparison of the roles, capabilities and limitations of NGOs and governments.[20] This realistic and very informative essay, "Defining a Role for Civil Society", should be read by all Civilian-Military Cooperation (CIMIC) personnel.

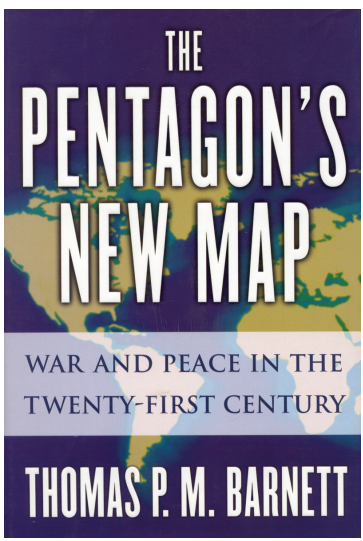
Building Sustainable Peace however, should be assessed in light of the readership of this journal. On the one hand, its utility is rather limited from an Army perspective—with the exception that it is of assistance understanding different perspectives surrounding peace efforts. On the other hand, CIMIC personnel and budding international relations scholars in the ranks will find it more useful and informative than will members of other branches.

Endnotes

1. Tom Keating and W. Andy Knight, "Preface", Tom Keating and W. Andy Knight, Eds., *Building Sustainable Peace*, (Edmonton: University of Alberta Press, 2004), pp. XVII-XVIII.
2. W. Andy Knight, "Conclusion: Peacebuilding Theory and Praxis", Keating and Knight, Eds., p. 355.
3. Tom Keating and W. Andy Knight, "Introduction: Recent Developments in Postconflict studies—Peacebuilding and Governance", Keating and Knight, Eds., p. XXXI.
4. Kenneth Bush, "Commodification, Compartmentalization and Militarization of Peacebuilding", Keating and Knight, Eds., p. 25.
5. David Beer, "Peacebuilding on the Ground: Reforming the Judicial Sector in Haiti", Keating and Knight, Eds., p. 120. Definition attributed to Jonathon Goodhand and David Hume, "From wars to complex emergencies: understanding conflict and peacebuilding in the new world disorder", *Third World Quarterly*, Vol. 20, No. 1 (1999), pp. 13-27.
6. Senator Douglas Roche, O.C., "Foreword: Learning to Build Peace", p. XIII.
7. Tom Keating and W. Andy Knight, "Introduction", pp. XXXII-XXXIII.
8. Kenneth Bush, "Commodification, Compartmentalization and Militarization of Peacebuilding", Keating and Knight, Eds., p. 38.
9. Sumie Nakaya, "Women and Gender Equality in Peacebuilding: Somalia and Mozambique", Keating and Knight, Eds., pp. 143-166.
10. Senator Douglas Roche, O.C., "Foreword: Learning to Build Peace", Keating and Knight, Eds., p. XIII
11. Satya Brata Das, "Sustainable Peace: Who Pays the Price?", Keating and Knight, Eds., p. 263.
12. Satya Brata Das, "Sustainable Peace: Who Pays the Price?", Keating and Knight, Eds., pp. 274-275.
13. Jean Daudelin, "Rethinking Humanitarian Intervention", Keating and Knight, Eds., pp. 8-9.
14. Jean Daudelin, "Rethinking Humanitarian Intervention", Keating and Knight, Eds., p. 14.
15. Jean Daudelin, "Rethinking Humanitarian Intervention", Keating and Knight, Eds., p. 16.
16. Kenneth Bush, "Commodification, Compartmentalization and Militarization of Peacebuilding", Keating and Knight, Eds., pp. 30-31.
17. Kenneth Bush, "Commodification, Compartmentalization and Militarization of Peacebuilding", Keating and Knight, Eds., p. 31.
18. Christopher Ankersen, "Praxis versus Policy", Keating and Knight, Eds., p. 75.
19. Christopher Ankersen, "Praxis versus Policy", Keating and Knight, Eds., p. 83.
20. Francis Kofi Abiew and Tom Keating, "Defining a Role for Civil Society", Keating and Knight, Eds, pp. 93-118.

THE PENTAGON'S NEW MAP: WAR AND PEACE IN THE TWENTY-FIRST CENTURY

Thomas P.M. Barnett, (New York: G.P. Putnam's and Sons; 2004). 435pp. $26.95 (US) $39.00 (Can).



Reviewed by Mr. Peter Gizewski

Recent years have witnessed considerable turbulence on the international front. Notwithstanding the fact that security is a top priority in the post 9/11 world, worries over future security and stability have—if anything—grown rather than declined. Fears of terrorist attack linger. Prospects for the proliferation and use of weapons of mass destruction (WMD) are growing. And, recognition of the dangers emanating from failed and failing states is on the rise.

Indeed, demands for a clear, well-reasoned and effective strategy for meeting key threats and future challenges have rarely been greater.

In *The Pentagon's New Map*, Harvard trained political scientist Thomas Barnett addresses these demands

with a bold and sweeping examination of US and global security and the articulation of an approach aimed at attaining both in the 21st century.

According to Barnett, existing international troubles lie not in ideological disputes, great power rivalries or any so-called "clash of civilizations", but in a world divided between a globalized, connected and functioning community of "core" states and those occupying a disconnected and non-integrating "gap." Those states in the core tend to be stable, democratic and industrialized and generally subscribe to a common set of rules and norms for state interaction, while those in the gap are marked by isolation, underdevelopment, anarchy and deadly conflict.

Not surprisingly, it is in the gap where the most serious threats flourish and where the world's principal dangers lie. At times, this threat may take the form of a rogue regime bent on revising the existing status quo. More often however, it will involve transnational terrorist organizations waging asymmetric conflict against the core, often from bases in failed and failing states.

Accordingly, security and stability demands contraction and eventual elimination of the "gap" and growth of the "core"—a requirement calling for a US-led campaign to impose order and "new rule sets" on the gap thereby allowing the benefits of globalization to reach those occupying the gap. In some cases, such efforts could entail subtle diplomatic persuasion and economic encouragement. Yet in others, it could involve the use of force—including acts of preemption and preventative war.

To be sure, such a sweeping plan carries risks. Of particular concern is the prospect of widespread and protracted US involvement in internal state conflicts and regional quagmires. Consequently, the support of a reasonably united group of core states (along with the UN) would be essential to success of any such strategy. Military power would also be a requisite for success.

In fact, a reformed US military consisting of a powerful, technologically sophisticated and combat-ready "leviathan" force as well as a "system administration force" focusing on more constabulary functions is a key aspect of Barnett's plan. The former would act as the tip of the expeditionary spear—allowing the US and its allies to quickly punch through any major military resistance that might be encountered in the gap. Meanwhile, the latter would focus on peace building: offering order and stability both at home and abroad. Throughout, overseas garrisons would be retained to support stability and allow for engagement in more direct action when needed.

Certainly, some of Barnett's suggestions should be welcomed. For instance, his call for a system administration force underlines the fact that victory in conflict involves paying as much attention to "winning the peace" as prevailing in war—a point that the current administration in Washington would have done well to consider before intervening in Iraq. An analysis that alerts readers to the implications of globalization for both national and international security is long overdue.

Still, other aspects of the author's analysis are less compelling. For instance, Barnett's contention that a lack of connectivity represents a key factor in gap-state failure may be well founded. His assertions that lack of connectivity is the *most useful* predictor of such failure and the violence that accompanies it—are far less compelling. For

example, during the 1990s, states in the war-torn Balkans were undeniably less well connected than many of their European counterparts. Nonetheless, the Balkans were *far better* connected by *any* conceivable measure than either Romania or Bulgaria which are both candidates for EU accession today. In short, there may be factors other than connectivity that produce state stability and success. Other factors including the degree to which "civil society" is present within a nation may well be of equal if not greater importance.

Beyond this flaw, Barnett's notion of a "functioning core" and a "non-integrating gap" risks creating the impression of greater in-group solidarity than is truly the case. Indeed, Barnett tends to obscure the fact that state relationships are highly multifaceted and complex. Consequently, certain core states may well have more in common with members of the gap on specific issues than with their core counterparts. Indeed, on specific issues, many of the citizens who reside within certain core states may share more with citizens from gap members than with citizens in other core states. Given the possibilities for such cross cutting allegiances, ensuring "core solidarity"—an important component of Barnett's strategy—may not be easily achieved.

In any case it is not entirely clear that key core states would subscribe to a US-led "gap" strategy. In this regard, nations such as China, India and Russia are likely to have their own "strategic maps." It is conceivable that these "maps," as well as the policies and actions required to support them, will differ markedly from those needed to meet the demands of a vision developed in Washington.

In fact, what becomes increasingly clear as one dissects Barnett's vision is how easily it could work to generate the very opposition and alienation in both core and gap that it aims to eradicate. Poorly explained and clumsily applied, military intervention aimed at salvation may easily translate into charges of political and economic imperialism. Furthermore, initiatives aimed at integrating societies into a "functioning core" may spur allegations of cultural assimilation Should such a perception occur, not only would resistance within the gap increase, but support for US strategy within the core could dwindle. The result could well be American isolation, backlash and a markedly higher price tag-both in terms of blood and treasure-for US intervention.

At the end of the day then, Barnett's work-while impressive in scope and intent-suffers from intellectual over-stretch. Although the broad contours of his strategy are clear, the prospects for its acceptance and effective implementation-both at home and abroad-seem far less clear. What's more, Barnett himself offers little in the way of convincing argument that would lead readers to conclude otherwise.

THE STAND-UP TABLE

Commentary, Opinion and Rebuttal

BELLUM REDUCTIO: REPEATING OLD MISTAKES?

Major Ronald Ruiters of the Directorate of Army Doctrine writes…

> *"I have always dreamed," he mouthed, fiercely, "of a band of men absolute in their resolve to discard all scruples in the choice of means, strong enough to give themselves frankly the name of destroyers, and free from the taint of resigned pessimism which rots the world. No pity for anything on earth, including themselves, and death enlisted for good and all in the service of humanity…"*
>
> *-Joseph Conrad*[1]

War is a difficult business—the ultimate and final arbiter of politics. Following von Clausewitz[1] dictum that war is the extension of politics or policy by other means, political and national survival depend on successful war fighting. That it is so is a uniquely Western idea that goes back to Aristotle's Politics and amplified by such diverse thinkers as Machiavelli and Hobbes. War is Darwinian competition and winning is crucial to the survival of the combatant, whether the individual or the state. We attempt to understand war primarily so that we are better at it than our potential opponents.

The subject of war both horrifies and fascinates. Since the terrorist attacks on the United States on 11 September 2001, interest in the "road to war" is high in the West and amongst our allies, particularly against the backdrop of the "war on terrorism" and the US-led counter-insurgency campaign in Iraq. Virtually every major international media event seems to be connected to war and, particularly, terrorism. Terrorism, which appeared to peak in the 1980s, has seemingly returned in a more virulent strain. There appears to be a collective sentiment at the beginning of the third millennium that the stability of the West, and its allies in newly emergent and vulnerable democracies, is threatened.

The latest catchphrase in our modern military lexicon—one that is generating great debate—is the term "Asymmetric Warfare". This term has been used (and abused) liberally, particularly since the stunning 9/11attack on the United States. While the term is relatively new, the concept is as old as war itself.

There is considerable discussion over what constitutes asymmetric warfare and the impact it has on Western military doctrine. It appears that asymmetric warfare threatens to unhinge the precepts of Western society as well as those of Western allies emerging in Central and the Middle East. While not new, the asymmetric threat has crossed a threshold of what means it will employ. The discussion must also consider how modern technology and ease of communication has made it possible to threaten governments.

Asymmetry in war recognizes the difference between the opposing parts or sides in their tactics, techniques and weapons. The Asymmetric Threat is one that exploits that

difference. Put in military perspective, it is " … a threat by an opposing faction to attack (a nation) by avoiding strengths, exploiting weaknesses and employing unexpected or unusual techniques."[2] Asymmetric Warfare is a form of war (or fighting) that employs asymmetric means. Asymmetric threats or techniques describe weapons and tactics that opponents could, and do use, to foil or circumvent the technological superiority of Western nations. These techniques can include the use of surprise combined with weapons or tactics in ways that are have not been anticipated. However, the term has become a catchy literary sound bite, which, while resonating well in our collective intellect, is misleading and misses the point.

A tremor has been felt in the West. As for all seismological disturbances, there were warnings if they had been looked for. In the last decade and a half, our enemies have seen the power of the West, particularly that of the US, in the Balkans, in both Gulf Wars and in Afghanistan. They know that they cannot win against or even hurt the West in a fair fight. And so they have struck at us in ways that are asymmetric to our technological and cultural vision of how to fight. They fight unfairly—an archaic concept today.

Who are they—this enemy? We write and speak of them as if they were a unified enemy who Borg-like have suddenly risen up against us. In this last decade, the West has been the target of a brutal offensive by those who would wound us and invoke a reaction that would threaten to sully the very things we hold as at the heart of who and what we are—democracy, liberty, respect for the individual, fair play, rules of engagement and rules of war (ROE).

Many speak of a revolution in military affairs. Revolutions are reactions against something. They evoke counter-revolutions and counter reactions. In The Sling and the Stone, Col TX Hammes (USMC) wrote that we are fighting Fourth Generation Warfare—a campaign against networked insurgency that strikes at our vulnerabilities even as we crow about our technological superiority and ability to wage "network-centric" warfare.

Hammes is correct when he urges the West to attempt to understand the minds and the motivations of our enemies and potential enemies. Our greatest vulnerability is Western arrogance and a blinding failure to understand the cultural terrain that we walk upon when we engage the 'Other' in foreign lands. Iconic historical figures like TE Lawrence and Orde Wingate stand out as exceptions to the rule because they knew the terrain.

If Fourth Generation Warfare (4GW) is just another way of saying Asymmetric Warfare why do we ignore historical examples? Col Hammes' thesis is sound but his base premise is simply wrong. What he calls 4GW is not a new military evolution on a temporal sliding scale but rather is as old as warfare and man himself. Hammes wants us to believe that insurgencies that dampen our superior forces by attacking at our vulnerabilities are only decades old. He cites Mao as the first to write about and practice 4GW. Yet he uses the analogy of David and Goliath. Why not the Israelites against the Philistines? It is in fact centuries' old warfare. Clausewitz cited insurgency and guerrilla warfare—People's War—directly. He had just observed the Spanish insurgency against Napoleon's forces. The latter incident illustrates the mix of regular

and irregular warfare in the juxtaposition of Spanish irregulars and the small British Army in Portugal.

One of the earliest historic examples of the asymmetric threat are the Nizari, later known as the Assassins, whose use of political murder as a core policy was a creative and bloody example of asymmetric warfare against their much more powerful Sunni and non-Isma'ili Shi'ite opponents, whom theNizari thought of as dangerous heretics. The Nizari operated in the Middle East from the end of the 11th century until their annihilation by the Mongols in the 13th century. Nizari leaders, such as the so-called Old Man of the Mountain, advanced the use of terror. Despite being vastly outnumbered, their large reach—encompassing even attacks on Saladin, arguably the greatest commander of the entire Middle Ages—inspired such fear that the Nizari exercised power in proportion far beyond their numbers. It can be argued that their apocalyptic vision and tactics find their direct heirs in the religious terrorists of today.

The series of attacks on 11 September 2001 by Bin Laden's followers—"shuhada" which means "martyrs in the name of Allah"—was an act of religious terrorism. On a sliding scale, religious terrorism approaches the purest form of asymmetric warfare in terms of difficulty to intercept. As opposed to secular terrorist organizations, such as Abu Nidal, which are structured and have a templatable doctrine, religious terrorist groups require relatively little direction among their foot soldiers. Their common view (usually apocalyptic) of the deserved fate of their loosely defined enemy gives them a simple mission and mode of operation (for example, to kill all blasphemers) that requires little to no command and control infrastructure.

Let's expand the discussion. What is the Threat? Threat is still roughly defined as capability plus intention. The Canadian Army writes policy, formulates doctrine, designs training and procures equipment for our soldiers for a threat that is not defined. By this I do not refer to the various threat models and writings that are legion and available. Rather, my point is that the Canadian Army does not have a specific document that we can hold up as the keystone threat assessment against which we develop our force. A quick review of existent sources and agencies reveal that capstone/keystone documents B-GL-300-000 Canada's Amy through -001 Operations, - 002 Tactics etc either do not refer to the Threat at all or at best refer to Clausewitz, du Picq and Huntington who describe how to fight wars, not who we are going to fight. As Napoleon once said—during our deliberations on the battlefield it behooves us from time to time to consider the enemy. It appears that not only do Canadians not read our own doctrine, but we ignore the enemy who does until too late and we pay more dearly than we need.

At the national level there is the CANUS Strategic Assessment (domestic) and DSI's long-term assessment. The best source reference we use is DLSC's Future Security Environment. Again, while an excellently organized and written work, it fits better into a War Studies course than as a working document against which we can write a threat assessment.

To be sure, there are many good documents out there, from Ralph Peters' work Beyond Terror to everything that the USMC produces, but we need a document signed off by the Commander of the army which harnesses the work of the J2, our allies and

commentators to produce a document which represents the Canadian Armed Forces' best assessment of what our soldiers will face over the next 5-10 years. The best example of this is the SHAPE MC 161 Threat Assessment. It details all the symmetric and asymmetric threats by country and non-country groups out there as well as providing information about their tactics and doctrine. Unfortunately, this document is classified.

As a result, we do not speak about the same threat when we discuss—let alone conceive, design and build capabilities—to defeat it. At present, we stand accused or are open to suspicion of situating estimates for individual agendas. It is my belief that a threat assessment document will at the least disappoint, or worse disrupt, present force planning. But it will bring intellectual rigour to the process.

Anatol Lieven, in his Hubris and Nemesis: Kosovo and the Pattern of Western Ascendancy and Defeat warns against seeing Kosovo (or the Gulf War) as the paradigm of war in the next half-century. He believes that the very success of Operation Allied Force, the NATO air attack on Serbia, will persuade future adversaries to confront the West indirectly in ways that will cancel out the West's technological advantage. For Lieven, who covered the wars in Chechnya and Afghanistan, the concept of "victory through technology" is an illusion; the astute enemies will fight asymmetrically.[3]

However, there is a danger in fixating on asymmetric warfare since, as the Gulf War reminded us, there will continue to be symmetric threats requiring our ability to launch a conventional deterrent. So while terrorism and other forms of asymmetric warfare have strikingly captivated the collective conscience, impelling us to new doctrine and threat force modeling to meet it, we must not lose our perspective. There is a distinct danger that we may become fixated anew on one form of warfare to the neglect of others. That would be repeating old mistakes. The remodelling or templating of new potential threats, and a subsequent restructuring to lighter forces, in the face of the asymmetric threat now and tomorrow, could actually weaken our ability to fight on traditional battlefields. It is difficult to rapidly upgrade forces designed for the low end of the conflict spectrum to handle the 'larger wars'—and it is usually the larger wars that have the larger stakes.

Is our new enemy permanently asymmetric? Will he only fight us in complex terrain? Or are we still threatened by tanks or armies acting with mass and firepower? It is only opinion (from a professional threat writer) but somebody forgot to write new doctrine for the Russians, Chinese, North Koreans, Iranians, Syrians etc against whom we have contingency plans on our shelves (a little dusty lately) that will avoid complex terrain (we all do) because they won't or can't fight their massive tank armies (in which they have invested scarce blood and treasure). The asymmetric treat, on the other hand, while it wounds us, cannot beat us. We cannot ignore it (good intelligence will reduce the asymmetry) and we need to be prepared to fight against terrorist, unconventional forces, guerrillas etc who may or may not fight asymmetrically to us. We must not rush, however, to re-template our foes, prepare to fight against a new enemy at the risk of abandoning our ability to fight large symmetric foes—because it is still the large battles wherein lie the large stakes.

The asymmetric enemy can be defeated. History is replete with examples of superior forces that studied their enemy, removed the veil of asymmetry and harnessed their

superior power to strike at the heart of the foe. Both Caesar before and Germanicus after defeated the German tribes that had annihilated Varus' legions.

We must not abandon those strengths that keep our enemies awake at night. Rather, we must harness our strengths and apply these to our enemies' weaknesses. To do this we must know the enemy and his weakness. We must fight smart. We already have the advantage

Endnotes

1. Joseph Conrad, "The Secret Agent." Quoted in Peter L. Bergan, *Holy War, Inc.* (New York, The Free Press, 2001), 24
2. Definition developed by the Army Terminology Board 22 January 2002
3. Anatol. Lieven, "Hubris and Nemesis: Kosovo and the Pattern of Western Ascendancy and Defeat." *War Over Kosovo: Politics and Strategy in a Global Age*, ed. Andrew J. Bacevich and Eliot A. Cohen. (Columbia: Columbia University Press, 2001)

MAKING SENSE OUT OF SENSE: WHAT NEEDS TO BE DONE?

Lieutenant Colonel Robert Williams, Canadian Forces Joint Imagery Center writes…

The five 'officially recognized' Canadian Army combat functions (Command, Sense, Act, Sustain and Shield) should not be seen as simply the emperor's new clothes on the digital warrior tabbing along the information highway, but rather as logical descriptors of the inseparable aspects of war-fighting combined with evolving technology. Having made this somewhat wordy declaration, I would like to describe what is really meant by the combat function of SENSE, and then to elaborate where we the Army needs to go now.

In order not to lose the reader in the myriad of new terms, I propose to start with a definition. Amongst the ten different Oxford Dictionary definitions of sense, perhaps the third most closely defines what the Canadian Army means by the surveillance/detection aspect of the combat function SENSE:

> Ability to perceive or feel or to be conscious of the presence or properties of things, sensitiveness of any or all of the senses.

In the Canadian Army doctrinal context, the goal of SENSE, intertwined with the other combat functions, must ultimately be the provision of the most effective (timely and accurate by logical inference) knowledge of the enemy, including capabilities, centers of gravity and intentions as a minimum. This knowledge must be more timely, accurate and thorough than current intelligence, surveillance and reconnaissance (ISR) means can provide. In this context, "enemy" must not simply be viewed as the traditional peer-competitor (e.g. the former Soviet Union) but must be seen to represent all potential adversaries and/or threats to a nation and/or military, be they man-made or natural.

The dangers here can be many-fold, spanning the spectrum from information overload to information famine, where data is either not being acquired or being acquired but not analyzed due to inability to move the data to a central analysis point and/or agency. So, before one gets to the point of talking about information dominance, all of the

required data handling capabilities must be in place and the appropriate personnel must be in the right location to perform timely and accurate analysis with the result being the best situational awareness/situational understanding (SA/SU) possible.

One of the features that renders SENSE as a distinctly separate combat capability and more than simply the current ISR is the ongoing impact of technology. Supported by increasingly advanced technologies, not the least of which includes secure high-speed wireless communications, SENSE should ultimately provide near-real time to real time coverage of activities that will encompass all levels of command from strategic to tactical in an integrated and hopefully coherent fashion. SENSE therefore implies that the future warrior will ultimately be provided with all of the relevant knowledge that he/she requires in a timely fashion. Does a Canadian warrior deserve anything less than this?

In the Future Security Environment (FSE) sense is defined as "the operational function that integrates sensor and sensor analysis capabilities into a single concept, breaking previous sensor/information stovepipes, allowing sensor fusion and all source analysis within a single system" (DLSC 1999, Ch 7). More recently, in *Future Army Capabilities*, SENSE is defined as "a tactical comprehensive entity that collects, collates, analyzes, and displays data, information and knowledge to all levels. Tactical, operational and strategic assets are integrated into a single continuum." (DLSC Jan 2001, p.48)

In layman's terms, the collection and analytical aspects of the Intelligence cycle together (i.e. SA/SU). Simple to conceive, and a desirable and noble goal, but how do we get from where we are to there? Although technology will assist, there is a requirement for a change in the philosophy of how we in the Canadian Army think. This thinking is not merely confined to processing in the cognitive sense, but in the way that parochial (i.e. cap-badge) issues are allowed to interfere with what really matters: the timely and accurate provision of this relevant knowledge/intelligence to the warrior.

Close cooperation of Signals (technical side), and Intelligence (analytical side) in both the integration and fusion of existing capabilities and the plan and design of future SENSE platforms, together with the involvement of operators of all possible current and potential SENSE systems, is essential to ensure that the ultimate goal of support to the warrior is always in focus. It is no longer a question of taking one's bat and ball and walking off a baseball diamond in a huff because you can't dictate the rules of the game or believe you have been insulted. The gravity of the real life tactical situations in which we place our soldiers is far too serious for that.

So, the time for emotional dialogue/discussion is over. We cannot afford to be left discussing whether to buy 2nd or 3rd class tickets when the train has already left the station. To effectively ensure that the best SA/SU is provided to the warrior, all members of the Army must be prepared to bring ideas/experiences to the table to be trialed and evaluated, proven or disproved, with emotions and egos left outside. The repository for good ideas is not limited to any rank and/or cap badge or to the military alone. Perhaps a COTS or MOTS system already either exists or is already being trialed. We must now take advantage of the momentum that is building in our *one Army* and have *one vision*, since we are all on the same *one team*. The primary goal of SENSE should be clear: timely, accurate and relevant knowledge/intelligence support to the

warrior, from commanders at all levels to our soldiers on the ground. We must continually ask ourselves, if SENSE does not always work towards this goal, are we off track?

THE MOST POWERFUL WEAPON

Captain Tim Fletcher Assistant Public Affairs Officer of the 31 Canadian Brigade Group writes...

We need to tell the factual story—good and bad—before others seed the media with disinformation and distortion, as they most certainly will continue to do. Our people in the field need to tell our story—only commanders can ensure the media get to the story alongside the troops.

Donald Rumsfeld, US Secretary of Defence,
on media embedding during Operation Iraqi Freedom [1]

This article had its genesis over dinner with colleague and former *Canadian Army Journal* editor Major John Grodzinski in March of 2004 in Kingston. I also work with frequent CAJ contributor Sgt Arthur Majoor at 31 Canadian Brigade Group Headquarters (31 CBG HQ) and his recent exhortation in these pages to all of us to pass on our experiences, beliefs and opinions in this journal is hereby taken up.

Let me preface this article by putting it in perspective. I am not claiming that Public Affairs (PA) is anything more than the subject matter expert in a particular field or that PA views should have primacy over all others. I seek only to highlight a particular situation I found disturbing, with the intent of stimulating thought and professional debate.

It should not be a surprise to anyone that the Canadian Forces has in its inventory a weapon of enormous potency. It can be fired in Afghanistan and land a devastating barrage in Ottawa—and vice versa. It can be used by a private and lay waste to a colonel. It can be employed by a non-combatant and devastate armies. It can lay in wait for years but arise in moments. It will fight for us and against us but call itself neutral. This amazing creation is known by many names, many of them pejoratives, but is commonly called "the media." It is the single most potent arm of any free and democratic society.[2]

I joined the Reserves in 1976 as a 24-year old officer-cadet. I was a reporter at the time in St. Catharines, Ontario, and a year prior to joining had attended a "Milcon" at CFB Petawawa with the then—commanding officer (CO) of the Lincoln and Welland Regiment, LCol Ian Purdie. One thing led to another until one day I was more or less told to put up or shut up. LCol Purdie was joking of course, but I accepted his challenge and was sworn in as an infantry officer in the Canadian Forces.

My early training was haphazard, with courses cancelled at the last minute as was then all too often the case, but my experience with the Lincs served me as well as anything. I was double-hatted as their "PR guy" because I was a reporter. Serving as an infantry officer, or "near-officer" even at the exalted rank of officer-cadet, opened my eyes. Just after being sworn in I spent two weeks in Egypt as a reporter covering the Canadian UN Contingent in the Sinai. I had a vague awareness of being part of something greater, a feeling that has grown tremendously and is now firmly embedded in my psyche.

Since then, I have served as the District PAO (public affairs officer) with the now-disbanded Hamilton Militia District, and later as Bde PAO with 31 Canadian Brigade Group (London), with a stint in between with The Royal Hamilton Light Infantry when HMD was stood down. I remain unit information officer (UIO) with the RHLI to keep a "street-level" perspective but my main position is as the Assistant PAO at 31 CBG since it was mandated that the senior PAO position be full-time (my day job is video technician with the Hamilton Police Service). Along the way I underwent rebadging from infantry to public affairs.

I have been on countless exercises, from weekends to two weeks. I was part of the "10-90" battalion concept (10 % Regular, 90% Reserves) with 3 RCR on their return from Germany and worked in the field with them. I have done "on the job training" (OJT) at National Defence Headquarters (NDHQ). I was regional PAO in the 31 CBG AOR during the Eastern Ontario ice storm. I have seen training morph from sand tables and home-built arty "puff ranges" to vast computer-based operations that compress days of battle into minutes of replay time.

I certainly do not claim to know all or to have done everything. My experience has been almost solely domestic with the exception of my brief time in Egypt and another opportunity recounted below. I have been a keen observer, however, in my 28 years in uniform. I know how the military and the media work. While this base of experience has given me a solid grounding in my military profession, in the past few years I have had two opportunities specifically in my field which have really brought matters into focus.

In March of 2002, I was an instructor in Public Affairs on a NATO AF SOUTH Partnership for Peace (PFP) mission to Kiev, Ukraine, as part of a five-member team. In March of 2004, I was an instructor in Public Affairs on EXERCISE FINAL DRIVE in Kingston, part of the Canadian Land Force Command and Staff College's Army Operations Course.

Ukraine is working towards membership in NATO, and, as part of that, wants and needs to understand Western media. My job on the PFP team was to provide basic familiarity with western-style electronic media and run a group of officers at their Staff College from lieutenant to major-general through simulated (but mild) western-style media interviews. The media environment in Ukraine is alien to anyone familiar with western media. The degree of government oversight would not be possible here. The military has a great deal of say on what gets published and what does not, at least concerning military matters. No western media would submit to this. Senior Ukraine military leaders, in the early stages of NATO integration planning, are coming to grasp this, hence their request for the PFP mission.

However, there were a few who did not accept or understand the role of a free and open media—the system of public checks and balances that can work for or against a military organization and which to a great degree depend on how the military organization interacts with the public. The concept of frank and honest public discussion of their organization was anathema to them—they did not believe it would strengthen them. They wanted a strong military and could not conceive that in the modern world, in the democratic society to which their nation is aspiring, this could only be achieved with public support. Very frank "hallway discussions" at days' end reinforced this impression.

On EX FINAL DRIVE, I was not prepared to find that same attitude—but I did. I personally worked with about thirty participants and about six—20%—of them "had issues" from minor to severe. This is a significant number. After discussing with my colleagues the work they did with the remainder of the 72 people on the course, it is apparent that there is further work to do.

Even in the military, it is unrealistic to expect 100% buy-in to any order, directive, theory or practice. Indeed, it is probably unhealthy to have 100 % buy-in. But dissension should be based on reasoned argument, a firm grasp of an organization's vision and future and its place and role in the society it is part of. The vast majority of FINAL DRIVE participants were keen and enthusiastic. Some in their media interviews were formulaic and others were exceptional—as in any walk of life (including Public Affairs). It is that 20%—some of whom who were openly and vocally not only dismissive of the training but contemptuous of the need for it—who concern me. In a democratic society, having officers of an armed service openly disavow the need for openness and transparency in the military is strange indeed.

The Canadian Forces, especially the Army, enjoys a nearly unprecedented level of support with the Canadian people. Generally speaking, the public are acquainted with and even interested in our operations, our equipment and our achievements. We are factored into political debates and campaign speeches. We are, in the vernacular, "popular." While this has not necessarily translated into all the concrete benefits in terms of strength, equipment and sustainable taskings that we might desire, can you imagine where we would be without public support and understanding?

The PAO is the battle commander in this effort, the deployer of the amazing "media" weapon. But there are very few PAOs. Just as an infanteer needs to understand the artillery; just as an engineer needs infantry skills; just as a logistics specialist needs to know how to survive on a battlefield, so must media knowledge be ingrained into every soldier but especially the leaders.

It is possible for a company commander in Afghanistan to impact his own soldiers not through enemy action, but through the media—by a missed opportunity, by an unthinking comment, by contempt of an embedded reporter. The media are and will continue to be an integral presence on the battlefield or operations area—at times, even media with enemy interests can be present. We cannot control the media, and can barely govern our involvement with it. The media is asymmetrical—they will pass comment on us with or without our involvement. Therefore, only through co-operation can we hope to actively present our reality. The modern battlefield leader in a western army must be equipped to deal with this. Reporters with their camera phones can impact a battle in progress.[3] An enemy commander can tune into CNN and see our soldiers manoeuvring against him. A politician angered by an inept remark can influence budgets. A slip of the tongue can give heart to an enemy. A public hearing only inaccuracies and bad news will give up support.

It is my experience that well-lead and motivated soldiers can be trusted to do the right thing not only on the battlefield but when talking to a reporter. One of my roles as a PAO is to channel their knowledge and experience into useful media material. However, I can't be everywhere and therefore, army leaders at all levels—NCOs included—must today be as familiar with at least basic media precepts as they are with all the other tools of their trade.

I asked former *CAJ* editor Lieutenant-Colonel Shane Schreiber, PPCLI, to review this article with his experience as a company commander in Afghanistan as a basis for comment. He noted:

> *I found your assertion that Cdn Army Officers still lack media awareness to be surprising, as media training and awareness are embedded (so to speak) in all of our training events, and anyone who has deployed recently, especially to Bosnia or Afghanistan, are quite aware of the power and potential (both positive and negative) of the press.*
>
> *One of the problems I have personally encountered is the PAff branch itself, which is staffed by both very competent and intelligent pers, and some not so intelligent, personable, or experienced. In fact, based on my personal experience, the soldiers and the media get along fairly well at the ground level—a "love-hate thing" perhaps, or at least professional courtesy—honour among thieves perhaps. The disjunct comes when inexperienced or misguided PAff O's are injected (or rather inject themselves) to "spin" (I know—"veritas", but let's be honest about what sometimes really happens).*

Fair comment.

This is an indication of the need to continue professional training for PAOs and ensure only experienced practitioners are deployed on operation or employed elsewhere in responsible positions, with lesser-trained personnel in subordinate positions with less-responsible tasks, the same as any other branch. This exactly illustrates my argument.

I believe that few Canadian army officers lack media *awareness*. What some lack is *acceptance*. My position is that some officers obviously refuse to accept that (a) they personally have a positive role to play with media, and (b) that the media have a valid and indeed necessary role in our society and that the military must not only accept it but understand how important this is to the military. The ones I encountered were disrespectful and dismissive of the media and resentful at taking the training. Perhaps this was simple fear of "making a mistake"—but that was the purpose of the training and the place to make mistakes.

I submit that these people, especially if employed on operations but in any key role, could also cause a significant "disjunct" with the media. They have deliberately eliminated a key weapon from their inventory because of personal opinion. It is like saying you don't like gunners and therefore refuse to draft an artillery plan, or that the last engineer you worked with was incompetent and therefore you refuse to have engineers on a mission.

The PAO is not the voice of the CF. The PAO is a facilitator, to allow the members of the CF to tell their story personally and be the interface between the CF and media. Unlike the media, we have a responsibility to be symmetrical and ensure a two-way flow of information in support of our employer, DND, so that the public can understand and therefore support what we do, and we can understand public expectations of their military. But the PAO is only part of the inventory of skills available to a commander, who is responsible for the correct employment all resources at his disposal. The commander expects the people in charge of the individual resources to work together in support of the common mission.

A trained and skilled PAO should part of the O-group, and when their input is required it should have the same weight as any other participant. While they will not plan a patrol, their input may provide some direction for it or explain the ramifications of planned actions. As well, while the PAO would not lead a fighting or recce patrol, they should be expected to be able to explain it to the public via the media and to provide media training to the soldiers involved. Conversely, therefore, the patrol leader is not expected to be a PAO but is expected to be able to interact with the media and explain their own role in an open manner (mindful of operational security at all times).

While some PAOs may take their tasks on a little too zealously ("spin"), if they head downrange with their wires cut they should expect the same reaction from their commander as anyone from any branch. The PAO must follow direction from above and not embellish or deviate from the approved plan.

As you train with your weapon systems, so must you train, and train willingly, to deal with the media. It is part and parcel of your inventory. Today's media can cut both ways and it is your actions that could decide the direction of the cut. It is hard for the PAO or anyone to "spin" something when the reporter and thus the public can see the event for themselves.

While the embedded media programs with the US and British forces in Iraq was not perfect, it was the "90% solution"—it worked well enough. Any member of the CF is entitled to their personal opinions, but the fact is the media weapon is here to stay and must be dealt with. Do you want to be the one who fires it at your own side?

> *It is clear that Secretary Rumsfeld made the right decision regarding public affairs policy in Operation IRAQI FREEDOM (OIF). The Embedded Media Program was a resounding success for both the military and the American people. The military and the media overcame many barriers of distrust and antagonism. The task before us is to build upon the successes enjoyed in OIF and attempt to correct or minimize the problem areas. While the Pentagon might claim that each future conflict will have to be examined before determining a public affairs policy, the truth is that the 'fork in the road' has been taken and there is no turning back. The Embedded Media Program is here to stay.*[4]

Author's note: For additional reading in this area, see Margaret Belknap, "The CNN Effect—Strategic Enabler or Operation Risk?" *Parameters: US Army War College Quarterly Journal* (Autumn 2002); and David Zucchino, "The Thunder Run," *Los Angeles Times*. The author can email these to interested parties.

End notes

1. SecDef message, Public Affairs Guidance on Embedding Media during Possible Future Operations/Deployments in the U.S. Central Command Area of Responsibility, Washington, DC 1-1900Z Feb 2003, opening quote from footnote 2.
2. Since this article was first drafted, a paper from the US has been circulating through Public Affairs channels: "LEVERAGING THE MEDIA: THE EMBEDDED MEDIA PROGRAM IN OPERATION IRAQI FREEDOM" *Colonel Glenn T. Starnes, OBE, United States Marine Corps* Strategy Research Paper http://www.carlisle.army.mil/usacsl/index.asp. This is highly recommended reading for any combat leader. Col. Starnes was a battalion commander in OIF—not a PAO.
3. Ibid, Pg 7. CNN live coverage of the entrance of US Forces into Baghdad convinced LGen Conway to modify his entire plan and speed up the attack.
4. Glenn T. Starnes, "Leveragin the Media: The Embedded Medial Prrogram in Operation Iraqi Freedom"., *United States Marine Corps Strategy Research Paper* http://www.carlisle.army.mil/usacsl/index.asp