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THE ARMY DOCTRINE AND TRAINING BULLETIN

Canada's Professional Journal on Army Issues

This is an official publication of Land Force Command and is published quarterly. The Army Doctrine and Training Bulletin is dedicated to the dissemination and discussion of doctrinal and training concepts, ideas and opinions by all army personnel and those civilians with an interest in doctrinal, training and other military matters. Articles on related subjects such as leadership, ethics, technology and military history are also invited. Considered, reasoned debate is central to the intellectual health of the army and the production of valid doctrine and training policies. Articles promoting thought and discussion are therefore welcome. All ranks and personnel from other environments are encouraged to contribute. Opinions expressed in the articles remain those of the author and do not represent departmental or Canadian Forces policy. The doctrine, training and other updates do not represent authority for action on that particular topic. All published material remains the copyright of the Department of National Defence and may be used with written permission from the Managing Editor.

ARTICLE GUIDELINES

Articles of any length will be considered for publication, the ideal length being 3000 to 6000 words. Articles can be submitted in either official language. Usage and spelling are in accordance with *The Canadian Style: A Guide to Writing and Editing* (Minister of Supply and Service 1997) and *Le guide du rédacteur de l'administration fédérale* – both are available via www.pwgsc.gc.ca/termium, libraries or bookstores; and *The Concise Oxford Dictionary* or *Le Petit Robert*. Supporting tables, charts and images must be provided by the author and should not be embedded in the text. Articles must include endnotes. Contributors must include a brief biography citing their academic background, noteworthy military or other experience, key courses and current position. Articles can be submitted via e-mail or regular mail (a disc copy must be included). All submissions will be reviewed by an Editorial Board and contributors will be notified by the Managing Editor on the status of their submission. The Managing Editor reserves the right to make minor editorial changes to grammar or style. Authors will be contacted should their submission require revision.

STAND-UP TABLE (COMMENTARY) GUIDELINES

Contributions to the Stand-Up Table should be no longer than 1000 words and can be made anytime. Every effort will be made to publish these in the earliest issue possible. Comments on articles should be submitted as soon as possible following the publication of that article.

DEADLINES

The deadline dates for submissions for each issue are as follows:

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Winter Issue:	By 30 June

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An American rifleman from Colonel Morgan's Regiment, c. 1775-1776. This regiment participated in the unsuccessful assault against Québec City in December 1775. (courtesy Parks Canada)

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A drummer of the first company of Voluntarios de Cataluna at Nootka between 1790 and 1794. Spanish claims to the north-west coast of North America led to the establishment of a garrison on Vancouver Island beginning in 1789. It was removed when Britain and Spain allied against France in 1793. (courtesy Parks Canada)

A soldier of de Meuron's Regiment, a Swiss unit in British service. This unit served in Upper and Lower Canada during the War of 1812. (courtesy Parks Canada)

Guest Editorial

Words from the Past

by Brigadier G.E.R. Smith

This "guest editorial" is a reprint of a memorandum released in 1943 and later published in *An Account of Operations of Supplies and Transport Service First Canadian Army, France and Belgium, 23 July 1944 – 31 October 1944*. Printed in the Field, 15 December 1944. It should be noted that following the Second World War, this memorandum reappeared regularly in Staff College course material and in a number of units – often by removing the original author's name and attributing it to whomever was signing it. It is reproduced in its full form here.

Brigadier G.E.R. Smith[1], C.B.E.
DDST[2]
Supply and Transport Branch
ADM HQ, First Canadian Army[3]

COMPLETED STAFF WORK

1. The doctrine of "completed staff work" will be the doctrine of all HQ Staffs First Canadian Army S.T.

2. "Completed Staff Work" is the study of a problem, and presentation of a solution, by a staff officer, in such form that all that remains to be done on the part of the head of the staff division, or the commander, is to indicate his approval or disapproval of the *completed action*. The words "completed staff action" are emphasized because the more difficult the problem is the more the tendency is to present the problem to the chief in piece-meal fashion. It is your duty as a staff officer to work out the details. You should not consult your chief in the determination of those details, no matter how perplexing they may be. You may and should consult other staff officers. The produce, whether it involves the pronouncement of a new policy or affect an established one, should when presented to the chief for approval or disapproval, be worked out in finished form.

3. The impulse which often comes to the inexperienced staff officer to ask the chief what to do, recurs more often when the problem is difficult. It is accompanied by a feeling of mental frustration. It is so easy to ask the chief what to do, and it appears so easy if you do not know your job. It is your job to *advise* your chief what he ought to do, not to *ask* him what you ought to do. He needs your answers, not questions. Your job is to study, write, restudy and rewrite until you have evolved a *single* proposed action – the best one of all you have considered. Your chief merely approves or disapproves.

4. Do not worry your chief with long explanations and memoranda. Writing a memorandum to your chief does not constitute completed staff work, but writing a memorandum for your chief to send to someone else does. Your view should be placed before him in *finished form* so that he can make them his views by simply signing his name. In most instances, competed staff work results in a single document prepared for the signature of the chief, without accompanying comment. If the proper result is reached, the chief will usually recognize it at once. If he wants comment or explanation, he will ask for it.

5. The theory of completed staff work does not preclude a "rough draft", but the rough draft must not be a half-baked idea. It must be completed in every respect except that it lacks the requisite number of copies and need not be neat. But a rough draft must not be used as an excuse for shifting to the chief the burden of formulating the action.

6. The "completed staff work" theory may result in more work for the staff officer, but it results in more freedom for the chief. This is as it should be. Further, it accomplishes two things:

   a. The chief is protected from half-baked ideas, voluminous memoranda, and immature oral presentations.

   b. The staff officer who has a real idea to sell is enabled to more readily to find a market.

7. When you have finished your "completed staff work" the final test is this:

If you were the chief would you be willing to sign the paper you have prepared, and stake your professional reputation on its being right?

If the answer is negative, take it back and work it over because it is not yet "completed staff work"

Signed (G.E.R. SMITH) Brigadier
DDST HQ First Canadian Army
9 Aug 43

Printed in the Field by 1 Cdn Mobile Printing Section, RCASC

ENDNOTES

1. Brigadier G.E.R. Smith was a member of the Royal Canadian Army Service Corps, who served as Deputy Director of Supplies and Transport, First Canadian Army from 15 December 1942 to 31 July 1945.
2. Deputy Director of Supplies and Transport. DDST was the head of the service and responsible for advising the Army Commander on supply and transport matters. He was also responsible for the operational and administrative efficiency of Royal Canadian Army Service Corps (RCASC) Units in First Canadian Army; supply and transport policy and planning; technical supervision over RCASC transport; the army supply and transport maintenance plan, including the requirements of the associated Royal Air Force Composite Group; and all matters pertaining to catering for the army. During its operational life, DDST was responsible not only for Canadian, but also British, Polish and other allied supply and transport units. See John R. Grodzinski, *Operational Handbook for the First Canadian Army, 1944-1945: Formation Organization, Staff Technique and Administration*, Privately Published 1996, p. 79.
3. HQ First Canadian Army included the General Officer Commanding in Chief, his Personal Staff and Military Secretary; a Chief of Staff, General Staff Branch, Adjutant and Quartermaster General (A & QMG) Branch and Military Government Branch. The A & QMG Branch included four staff sections and 14 advisory service, which included DDST. See Grodzinski, *Operational Handbook*, table between pp. 80 - 81.

From the Managing Editor

On the Importance of a Literary Culture

by Major John R. Grodzinski, CD

Several weeks ago, a Development Period 4 Writing Board was held in Kingston. A group of senior and general officers met to determine the qualifications necessary for colonels and general officers to conduct their duties. To aid the discussions, the board members were given a recently published paper on the subject titled "An Analysis of Strategic Leadership". This excellent paper examined strategic leadership as a distinct leadership requirement which in the words of the author, would "be highly irresponsible" if it were ignored.[1]

Surprisingly, Canadian literature on this subject is rather thin. Aside from a few instances, our officers have had little inclination to write on leadership or major issues, which is perhaps best summed up in this passage written in 1995:

> Since 1950, no service Canadian Forces Officer above the rank of colonel has written anything beyond descriptive articles and none that challenged even mildly the extant views of strategy in NATO, NORAD or the UN or made anything but safe recommendations for national policy. The paucity of intellectual activity in their chosen profession paints the Canadian officers corps as a body that is either thoroughly cowed, completely lacking in imagination, or uninterested in its profession.[2]

Perhaps one of the reasons for this may be that during the Cold War, there was no need to write or ponder these issues. NATO established strategical and training policies and ours simply responded to this lead. The Canadian brigade stationed in Europe would be trained, exercised, deployed and employed by standards developed by the alliance, while Canadian based units trained to those same standards. In some ways it was easier. Now things have changed. While NATO partnership is still important, Canada is frequently despatching forces to a variety of missions not seen since the mid-1970s. This crushing tempo demands a clearly articulated national strategy—not just a business plan—but a strategy that means something. Indeed recent policy initiatives indicate that some strategic thought is developing. To cope with this "brave new world" Canada must develop senior leaders capable of strategic thought. Courses, education, training and experience are useful, but not the only means. We also need more. We must develop a literary culture to support professional development. Writing for journals will lead to debate, encourage the exchange of ideas and foster critical thinking. It will allow a vibrant leadership *culture* to develop. Certainly a number of professional development initiatives are promising. The recent publication of two books on this subject is also significant.

For years, military leaders, academics, pundits and others have decried the limited literature on Canadian generalship (and the parallel *art of the admiral*). The release of *Warrior Chiefs: Perspectives on Senior Canadian Military Leaders and Generalship and the Art of the Admiral: Perspectives on Canadian Senior Military Leadership* both edited by Lieutenant-Colonel Bernd Horn, Ph.D. and Dr. Steve Harris (Senior Historian at the Directorate of History and Heritage), gives us an enhanced body of literature on the subject (see the centre of this issue for more details). Both editors are congratulated for their efforts as are the authors who contributed. Let us see what seed has been planted…

OOPS, WE DID IT AGAIN…

Editorial oversights sometimes occur in the production of the Army Doctrine and Training Bulletin. In the previous issue (Vol. 3, No. 4/Vol. 4, No. 1 Winter 2000/Spring 2001) several French text articles were published that had not quite been properly edited, meaning there were several errors in the text. For example several errors appeared in the French text of "Manoeuvrist Operations: Some Thoughts on Whether We Have Got it Right" by Major L.R. Mader:

- The correct translation of Directorate of Operational Research (Joint & Land) is Direction Recherche Opérationnelle (Interarmées et Terres) (DRO[IA&T]);
- The sentence "L'amélioration la plus efficace et la plus fonctionnelle apportée au VBC (découverte lors de l'exercise QUARRÉ de FER) est l'ajout d'un tube lance-missiles …" should be written L'amélioration la plus efficace et la plus fonction-nelle apportée au VBC (découverte lors de l'exercice QUARRÉ de FER) est l'ajout, **à l'armement du VBC, d'un missile lancé au travers de l'âme du canon** …";
- The sentence "Améliorer le VBC en augmentant sa protection pour qu'elle équivaille à un blindage homogène laminé (RHA) de 400 mm est une mesure inutile …" should be written "Améliorer le VBC en augmentant sa protection pour qu'elle équivaille à un blindage

Major John R. Grodzinski, CD

homogène laminé (RHA) de 400 mm **de plus** est une mesure inutile …"; and

- The sentence "Finalement, l'escadron a subi de telles pertes qu'il a fallu ' … que les équipes de combat de tête de l'escadron …' " should be written "Finalement, l'escadron a subi de telles pertes qu'il a fallu ' … que les équipes de combat de tête de **la brigade** …' ".

The Spring 2001 issue (Vol. 3, No. 1) included an error in the title for a Stand Up Table piece by Dr Sean Maloney on pages 72-73. In a commentary on the special operations forces, Dr Maloney's title should have read "**SOF** Power is Hard Power", not "Soft Power is Hard Power".

The Managing Editor apologizes to both authors and readers for these oversights.

ENDNOTES

1. Master-Corporal Richard P. Thorne. "An Analysis of Strategic Leadership", the Army Doctrine and Training Bulletin" Vol. 3, No. 3, Fall 2000, p. 15.
2. Douglas Bland. *Chiefs of Defence: Government and the Unified Command of the Canadian Armed Forces.* Toronto: Canadian Institute of Strategic Studies, 1995, p. 29.

Editor in Chief of the Bulletin Departs

Readers of the Army Doctrine and Training Bulletin may be unaware that there is an Editor in Chief for this publication. He is Brigadier General Marc Lessard, who is also the Deputy Commander Land Force Doctrine and Training System and the Commandant of the Canadian Land Force Command and Staff College. As Brigadier General Lessard is posted at the end of May, the Managing Editor would like to extend his appreciation for the honest opinions and careful editorial review General Lessard gave to each issue. The regular pre-publication meetings were always a delight. General Lessard struck the right balance between editorial freedom and professional imperatives. Best of luck to General Lessard and his family!

Directorate of Land Strategic Concepts
Future Army Capability Requirements

We are short of money—so we must begin to think.

– Lord Rutherford

Several years ago, Army Council initiated the Future Army Development Plan[1] (FADP). The plan provides a focus and framework for an ongoing analysis of future trends and conditions that will impact on force development in the 10- to 25-year time frame. The analysis is to answer three questions:

- What are the defining features of the future security environment?
- What are the force capabilities and characteristics required to operate in that environment?
- What are the alternative concepts and technologies essential to realize those capabilities?

In late 1998, under direction of the Commandant, Canadian Land Forces Command and Staff College, the Directorate of Land Strategic Concepts (DLSC) began the research process. The Directorate embarked upon a wide-ranging analysis of the global and domestic environments, emerging technologies, allied and foreign force developments and, in an effort to avoid past mistakes, the lessons of history. The results of the analysis were published in August 1999 in DLSC Report 99-2, *The Future Security Environment*.[2]

The Army recently passed another milestone with the publication of the *Future Army Capabilities* report. In keeping with the FADP, this report identifies possible force capabilities and characteristics. Lieutenant-General Jeffery, Chief of the Land Staff, notes in the foreword:

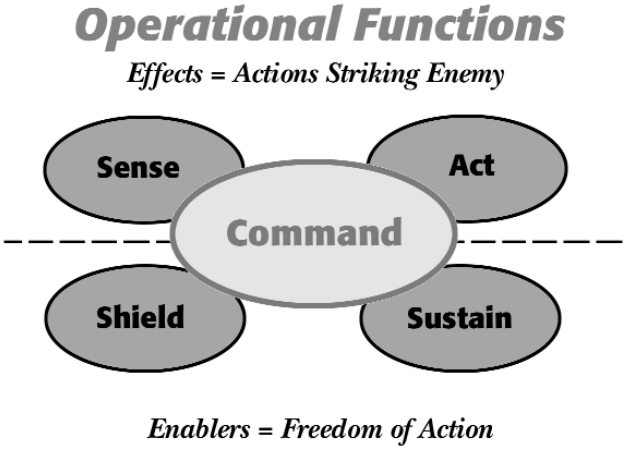
> This document does not provide a blueprint for the future. The reader who seeks a prescriptive approach will be disappointed. What this document does do is set the left and right of arcs of the path we will follow. It provides food for thought, and it sets the tone and direction for the intellectual debate that we must engage in if we are to meet the mandate given to us by the people of Canada.[3]

The Future Army Capabilities report was developed through consultation with a wide range of expertise, military and civilian, Canadian and foreign. The report begins with a brief review of the future security environment, highlighting the conclusion that the world will remain unstable and that both inter and intra state warfare will continue. The report postulates that over the next 20 years, the world will become even more complex and states will become more interdependent. In addition to the many traditional sources of conflict, population pressures, resource shortages and environmental deterioration may also contribute to regional conflict. The proliferation of weapons of mass destruction is forecasted along with the growing threat of asymmetrical warfare. Against this backdrop, the world community will have a growing incentive to deter, pre-empt, contain and police hostilities. Canadian soldiers will no doubt continue to be committed to a wide variety of missions in diverse and distant locations.

After a brief review of the environment in which Canadian soldiers might operate, the report offers a possible view of the future battlespace. The ability to see, target and strike forces throughout the battlespace, combined with improvements to munitions and delivery systems, will increase the lethality of future operations. The future battlespace is forecasted to be multi-dimensional, stretching from the sub-surface environment to space, with tactical operations shifting from a series of discrete sequential tasks to a continuum in which the operational tempo is maintained at a consistently high level. In response, the Army must consider the requirement for the rapid and dynamic creation, application and re-distribution of military force. Other key features of the analysis include an emphasis on knowledge and how this will facilitate situational awareness and, in turn, lead to non-contiguous operations. Areas of operations, in both war and international stability operations, are forecasted to continue expanding and to possess the following characteristics:

- precision and lethality,
- compression in time,
- expansion in volume,
- dominance of knowledge,
- simultaneous operations, and
- operations in urban terrain.

The central feature of the Future Army Capabilities report is an analysis of required capabilities within each of the operations functions—Command, Act, Sense, Shield and Sustain. These functions were introduced in the Future Security Environment and have been the subject of considerable debate. They are not yet doctrine; however, as the CLS has stated, "These functions represent the next step in the evolution from the old eleven combat functions



through to our current six. They provide a good framework for discussion about the Future Army."[4] The underlying emphasis is on the integration of capabilities. As shown in Figure 1, Command sits at the nexus linking the other functions within a single, comprehensive tactical, operational or strategic concept.

The chapter on Command sets out the conditions under which future commanders will operate and identifies the defining characteristics that will be required for success. Of note is a move away from combining Command with other subordinate functions such as control, communications or computers. Command is defined as a human endeavour with the other 'C's in support. Successful command is viewed as resting on a balanced framework of competence, authority and responsibility.[5] Also of note is an emphasis on leadership and the establishment of shared intent.[6] Technology receives its due, in particular, how it will serve to provide situational awareness to a level rivalling that of Frederick the Great.[7] Technology may well serve to change the way in which headquarters are organized and orders are passed. It is clear that technology must be exploited, but commanders of the future will require the discipline and will to ensure that the human dimension remains paramount.

In keeping with the underlying theme of integration, the function of Sense is portrayed as permeating all the other functions. Sense is forecasted to take on a heightened importance in what promises to be a complex environment. The link between sensor and shooter is explored as is the possibility of exploiting technology to carry out routine analysis. Using technology, Sense is expected to develop into a web-like capability stretching from the tactical to the strategic level. The volume of information that will be available is a concern; however, it is anticipated that "intelligent push" and "responsive pull" systems will provide the appropriate filters. Properly managed, Sense will enhance the speed, confidence and precision of decision making. The discussion on Shield emphasizes the inextricable link to the other functions and how Shield will be expected to counter a myriad of conventional, emerging and yet to be identified threats and capabilities. Improved lethality will not remain the sole purview of friendly nations. While shielding against conventional munitions will continue to be a challenge, the protection of data, information and knowledge will become increasingly important.

In order to identify and group capability requirements for future operations, Act advocates a methodology based on three integrated regimes—close, extended and information operations. The analysis draws on work conducted by our allies as well as on historical Canadian experience and argues that any future tactical land force that lacks integral extended Sense and Act capabilities will operate at a severe disadvantage and may well be incapable of integration within a modern coalition force other than in a supporting role.[8] Act is presented as being relevant across the spectrum of conflict including View 1, View 2 and humanitarian operations. The question is posed as to how smaller armies will fight in larger operational areas. This expansion in size is a recurring theme in the work being done by other western nations. In a 1998 US Army Advanced Warfighting Experiment, the division frontage varied from 120 to 200 km with brigade combat team frontages averaging 40 to 70 kms.[9] Of interest in that experiment was that all three brigade combat teams in the division were committed forward and, contrary to traditional doctrine, a ground reserve was seldom maintained. The chapter goes on to examine each regime in turn including possible tasks and required capabilities. And finally, the suggestion is made that the traditional battlefield framework of close, deep and rear operations, with the Canadian Army occupying a single, tightly defined box within the close battle area, is no the longer the only construct for operational design. The battlespace is changing, and Canadian doctrine, equipment and structures must change accordingly.

And finally, the *Future Army Capabilities* report examines the function of Sustain. As with the other functions, the theme of integration is stressed with Sustain as a key enabling function. Sustainment is presented as an overarching capability, encompassing both the physical and moral[10] domains covering all activities related to personnel, materiel and sustainment engineering support. Sustain must move towards an anticipatory approach that will enable support services to be provided commensurate with the anticipated speed and tempo of future operations. Supply-based support centred on stockpiling within echelons will evolve to a distribution-based system in which supplies will be held within a 'pipeline' stretching from the tactical to the strategic level and delivered on an as required basis. Replacing mass with timely precision will be very dependant on technology and, in particular, on having a robust communication system. Traditional lines of communication may well disappear to be replaced by sustainment nodes that generate unique, mission-oriented support. Of note is that "just-in-time" is viewed as a relative term and, in its purest sense, applicable more to industry than to the military where mistakes are measured in blood and not red ink! The chapter looks at how diagnostics, prognostics and ultra-reliability will enhance maintenance and how this, in turn, will impact on repair parts and on crew training. Medical capabilities are looked at as well with the possibility that applied technologies will increase an injured soldier's chances of survival. The chapter concludes by acknowledging that the provision of sustainment support will continue to be a challenge that will consume significant resources.

The report's concluding chapter looks ahead to the third step in the FADP process—that of developing a conceptual model to achieve the required capabilities. The chapter acknowledges that in looking to the future we must remain true to the national qualities that have shaped our Army. In war, Canadian soldiers have earned a reputation as courageous, tough and resourceful fighters. In

peace support operations, Canadians are known for their compassion, objectivity and professional skill. During domestic crises, Canadian soldiers have responded with equal dedication and professionalism. This is a firm foundation for the future and one that must be guarded with care and pride.

To reiterate the point made by Lieutenant-General Jeffery, the *Future Army Capabilities* report does not provide a blueprint for the Future Army. However, if the report serves to stimulate debate, it will have achieved its purpose. Critical debate has been a mainstay of the research effort to date, and the staff of the Directorate of Land Strategic Concepts hope that all readers, both military and civilian, will stay engaged in the process.

The report is available in electronic format through the DLSC home page. A limited number of hard copies are available on demand from the DLSC.

ENDNOTES

1. Department of National Defence, *Future Army Development Plan* (Kingston, Ontario: DND Canada, 1998).
2. Department of National Defence, DLSC Report 99-2, *The Future Security Environment* (Kingston, Ontario: DND Canada, 1999).
3. Department of National Defence, DLSC Report 00-01, *Future Army Capabilities* (Kingston, Ontario: DND Canada – to be published).
4. Op. cit., *Future Army Capabilities*.
5. A conclusion based primarily on the research work of Dr. Ross Pigeau and Ms Carol McCann of DCIEM that was presented in a series of four papers – *Putting Command Back into Command and Control: the Human Perspective, Taking Command of C2, Re-defining Command and Control*, and *Clarifying the Concepts of Command and Control*.
6. For a detailed explanation of intent, see Dr. Ross Pigeau and Ms Carol McCann, "Redefining Command and Control" in *The Human in Command*, R. Pigeau and C. McCann eds. (New York: Plenum Press, 2000), pp. 163-184.
7. This comment refers to the use of technology to give a future commander full vision of the battlespace, albeit in virtual form. If realized, such situational awareness would rival that of Frederick the Great who could physically see the entire battle in which his forces were engaged.
8. During the late 1950s and 1960s, the Canadian Brigade in Europe possessed, in relative terms, considerable extended range capability—[11]all of which was relevant to its tactical mission. See Sean M. Maloney, *War Without Battles: Canada's NATO Brigade in Germany*, 1951-1963 (Whitby, Ontario: McGraw-Hill Ryerson Ltd, 1997).
9. For the US Army see United States Army, Division XXI Advanced Warfighting Experiment, Final Report (TRADOC Analysis Centre, July 1998).
10. Moral is intended in the Clausewitzian sense. For a more detailed explanation see Carl Von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Parat (Princeton New Jersey: Princeton University Press, 1976), pp. 137 and 186.

"Global Mobile II"

The Development of Forces Mobile Command, 1965-1972

by Sean M. Maloney, Ph.D.

The present absorption with United Nations' missions was put into its proper perspective by the Government during the debate on unification. It dismissed as "nonsensical" the suggestion that Canadian forces were being converted into a '"peacekeeping organization" with no capability beyond UN fire-brigade missions.... Whatever euphemisms might be conscripted to soothe the faint-hearted, Canada was constructing, for the very first time, a standing expeditionary force ready for armed intervention wherever the interests of the nation and its allies could be best served.

– Leslie F. Hannon (1967)[1]

INTRODUCTION

This is the second of a two-part series on Forces Mobile Command. Part I dealt with the antecedents and strategic context behind the creation of a Canadian mobile force, an event mandated by Paul Hellyer's 1964 Defence White Paper. Movements towards a globally deployable mobile force evolved as the Canadian Army sought to reconcile low intensity conflict developments and commitments. These were expressed through the United Nations (UN) Standby Battalion Group and North Atlantic Treaty Organisation's Allied Command Europe (NATO's ACE) Mobile Force with a force structure, which was geared to deter and fight a high intensity conflict in NATO's Central Region. The Army's strategic thinking eventually came around to accepting that some balance had to be struck and formalized such thinking by 1963, roughly the same time Canada's new strategic policy was undergoing radical change. It would, however, take some time before that policy could be articulated and the force structure altered to reflect it.

PERSONALITIES, BUREAUCRATIC POLITICS AND IMPLEMENTING CHANGE 1964-1965

In February 1964, Prime Minister Mike Pearson established a committee to examine the draft White Paper.[2] At the same time, Hellyer held informal meetings with each of the service Chiefs. They were told that Hellyer was going to add a section on integration and unification. Integration of the headquarters would be a first step, followed by unification of the three services later down the road. It was apparent that:

> There was no doubt that while the Chiefs of Staff had no serious objection regarding integration in the context of a single management and staff to direct and control the three services, they were most concerned about the ultimate goal of a single unified defence force.[3]

Air Chief Marshal Miller, Lieutenant General Walsh, Vice-Admiral Herbert Rayner, and Air Vice Marshal Larry Dunlap met to exchange views and compile a memo to Hellyer. Miller was indecisive on the matter as he favoured integration, and was more concerned about the impact of the two concepts on the forces' morale. Consequently, Walsh felt, "there was a lack of direction"[4] from Miller. Rayner "was an enthusiastic supporter of integration" but he drew the line on unification "unless the roles and tasks of the forces were to be redefined from those set out in the White Paper."[5] Walsh and Dunlap held similar views. These perspectives were apparently all conveyed to the Minister. However, Canada's National Military Representative to Supreme Headquarters Allied Powers Europe (SHAPE) Major General George Kitching, who was present at several meetings:

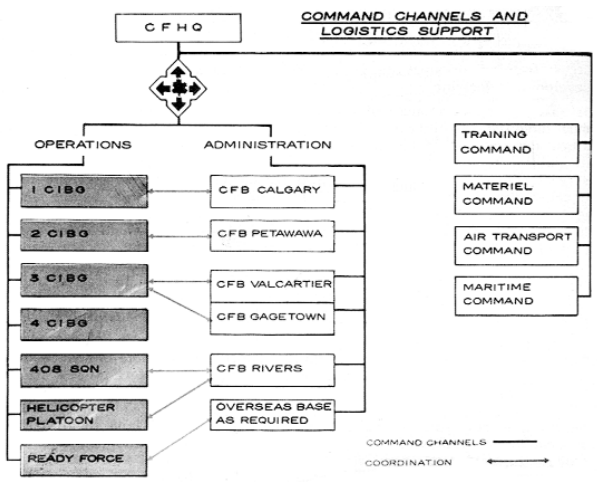
> ...began to have doubts about Miller's and Walsh's ability to do anything. They were pawns in the game....following this meeting I was told by [Admiral] Bill Landymore about the way Admiral Jeffry Brock had been fired by Hellyer in August. Frank Miller had been present on that occasion and must have realized he was serving a very unstable minister. Yet here he was telling us he would not let things get out of hand. I was losing confidence in the new look.[6]

The Draft White Paper then went to Cabinet. No major changes were made to it, and according to Hellyer, there was no interest in debating unification.[7] The White Paper was approved by Cabinet on 25 March 1964 and went before Parliament for debate. It was approved on 16 July 1964.

With the passage of the Paper, the Chief of Staff Committee (COSC), Naval Board, Air Staff and General Staff were all eliminated. The uniformed head of the Canadian Armed Forces became the Chief of the Defence Staff (CDS) assisted by the Vice-Chief of the Defence Staff (VCDS). The Deputy Minister was retained, as was the Chairman of the Defence Research Board (DRB).[8] A "Defence Council" was formed consisting of the Chairman DRB, the CDS, the Deputy Minister, an Associate Minister of National Defence and the Minister of National Defence. Its purpose was to provide "military, scientific, and bureaucratic advice to the minister."[9] This is an ideal description of that organization since Hellyer used it infrequently, choosing rather to issue instructions directly to the CDS.

The changes established a Canadian Forces Headquarters (CFHQ). Under the VCDS came the

Chief of Operational Readiness (training, doctrine, communications and safety); the Chief of Personnel; Chief of Logistics and Engineering; and a Comptroller General (programme management). The Deputy Minister, who was now ranked the equivalent of the CDS, ran National Defence Headquarters and had several Assistant Deputy Ministers (ADMs) for Finance, Personnel, Requirements (procurement), and Works (facilities). He was also responsible for public 'information management'.[10]



Command channels and logistic support for FMC, from a briefing given by Lieutenant General Allard to the Standing Committee on National Defence, 21 June 1966.

The most immediate implication of these changes was that the Canadian Armed Forces leadership and control mechanisms would exist in a state of bureaucratic disarray for the next four years. The Trudeau Government would eventually exploit this disarray in an attempt to radically alter Canadian national security policy; this in turn had an attenuating effect on Mobile Command in the 1970s.

The immediate effects of unification, however, were less drastic in the short term on the operating forces: they were regrouped and renamed over the course of the next eighteen months. The forces based in Europe, namely the brigade group and the air division, reported directly to CFHQ but were still assigned to Northern Army Group and 4 Allied Tactical Air Force respectively. The three Canada-based brigade groups were grouped together to form Mobile Command. The demise of the air staff meant that the RCAF's maritime patrol aircraft were grouped with the former RCN to form Maritime Command. Air Defence Command (ADC) and Air Transport Command (ATC) were retained and gained equal ranking with Mobile Command and Maritime Command which, not coincidentally, increased the proportion of former RCAF officers to former Army and Navy officers within the CFHQ (three to four of the seven Commands were run by ex-RCAF officers). This had a significant long term effect on the bureaucratic culture within CFHQ, which would eventually result in the demise of Force Mobile COmmand FMC in its original conception by 1972. Finally, Training Command and Material Command rounded out the new organization.[11]

Such a major reorganization was not undertaken without opposition. Paul Hellyer summarily dismissed those senior officers who opposed integration and unification in a humiliating fashion. This included most of the RCN's second tier leadership.[12] Walsh was considered too old for the senior post and retired, so Frank Miller reluctantly became the Chief of the Defence Staff; Rayner retired, and Dunlap moved to North American Air Defense Command (NORAD) HQ. Air Marshal F.R. Sharp became the VCDS under Miller. Two other air force officers were placed in charge of personnel and operational requirements. Major General George Kitching told Hellyer that:

> . . . neither [Air Commodores] Reyno nor Carpenter have any knowledge of how the army operated or of its requirements. … I said I hoped that they would never be in any position of authority over soldiers. He did not reply. It was obvious that Hellyer was buying loyalty with promotions and I was sorry to see friends of mine climb on the bandwagon and joint the circus in Ottawa."[13]

The General Officer Commanding Quebec Command, Major General F.J. Fleury, noted that this environment generated:

> …things [that] were being done under the cloak of integration which really were not part of the integration process at all....I found that officers working for me knew more, or said they knew more, or thought they knew more, about what was in the Minister's mind than I did.... I saw evidence of disloyalty and near disloyalty, in some people to the point literally that on one, two, or three occasions a week I would sit at my desk and feel like vomiting.[14]

The man selected by Hellyer to lead the transition from the Army to Mobile Command was Major General Jean Victor Allard. Allard was an experienced leader who had served in the Second World War, in Korea as a battalion commander, and later as the Vice-Chief of the General Staff. He was intimate with NATO operations since he also had commanded a British mechanized infantry division in the Central Region in the early 1960s.[15]

Hellyer was on the hunt for general or flag officers supporting his vision and few could be found in the Royal Canadian Navy. A bargain was struck between the two men while Allard was laid up in the hospital. Allard would support Hellyer if he were given a free hand with the land forces. Allard was opposed to adopting U.S. Marine Corps model since in his view his beloved regiment (the Van Doos) would be consumed "into the melting pot." His preference was to create a mobile force in line with government policy, but to establish two armies which would work together under the rubric of Mobile Command: one English-speaking, the other French-speaking. This was not strictly a nationalistic move on Allard's part, though it was the primary factor since he believed that the Army had too few officers from Quebec. In the post-Congo analysis, there was ample evidence that the lack of bilingual signal

personnel generated problems in sustaining the Canadian contingent. Mobile Command would not suffer from this deficiency: this was the origin of the French-speaking *5e Groupement Brigade du Canada*, which would be established in 1969.[16]

Allard could gain no guidance from the CDS Air Chief Marshal Miller or anywhere else, Allard, as stated in his memoir, saw his job as solving a series of questions left unanswered by the White Paper: "What was meant by Mobile Command? A force to intervene in unknown theatres of operations? A force for internal stabilization? A force for the defence of the northern territories?"[17] Allard's first move was to establish a small study group in the spring of 1965 to brainstorm ideas. Included in the group were Major Ramsay Withers, (a future CDS), Major General W.A.B. Anderson, and Major General F.J. Fleury. They recommended that a Mobile Command Planning Group be formed to deal with this complex issue. The physical transition process was not an easy one, since operational continuity for existing commitments had to be maintained. In addition, one recommendation was that Mobile Command retain the existing Army Tactics and Organization Board (ATOB). ATOB also had a secondary role to form a divisional headquarters, so that Army expertise in high intensity conflict did not disappear. In effect, the study group recommended that Mobile Command be capable of conducting northern operations and nuclear operations in Europe. It was also to posses an "airborne unit able to intervene rapidly in limited conflicts" as well as an "air group enabling us to adapt ourselves to these different circumstances."[18]

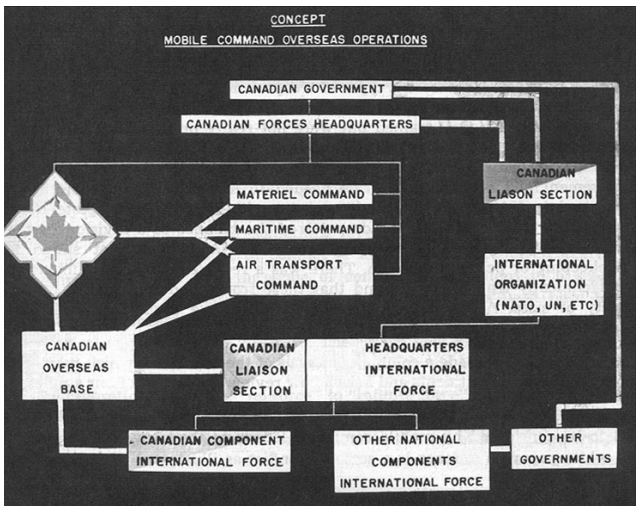
The study group and planning groups appear to have drawn on some work conducted by ATOB in April 1965. ATOB examined the future of the Army's field forces in light of the 1964 White Paper and concluded that "too much of the field force is dually committed" and that two basic types of formations were needed:

1. Light airborne/air transportable forces for the Defence of Canada-US region, peacekeeping, the Allied Command Europe Mobile Force and small limited wars;

2. Heavier armoured and mechanized forces to fulfil the Canadian Army's role in NATO Europe.

> The two requirements are incompatible and, therefore cannot be developed efficiently or effectively in the same formation.[19]

ATOB viewed the future security environment as consisting of a multi-step spectrum of conflict. First, there was "General War/All-out Thermonuclear War" followed by "Massive Conventional and Limited Nuclear War." Then there was "Small Scale Aggression NATO Area" (which might be conventional or nuclear) and "Defence of the Canada- US Region." ATOB foresaw "Limited War Operations outside the NATO-Canada-US Region" as well as "International Peacekeeping" under which, according to ATOB, Canada was to deploy "forces capable of operating to counter small scale aggression on NATO's flanks."[20]



Concept for the command and control of overseas operations, 21 June 1966.

The study was prophetic in numerous areas. Significantly, ATOB warned that:

> While improved air transportability characteristics can be achieved by changes in ground forces equipment and organization, our Canadian posture will not be improved significantly unless adequate airlift is available from national or NATO sources ... we need strategic airlift more than we need tactical air support.[21]

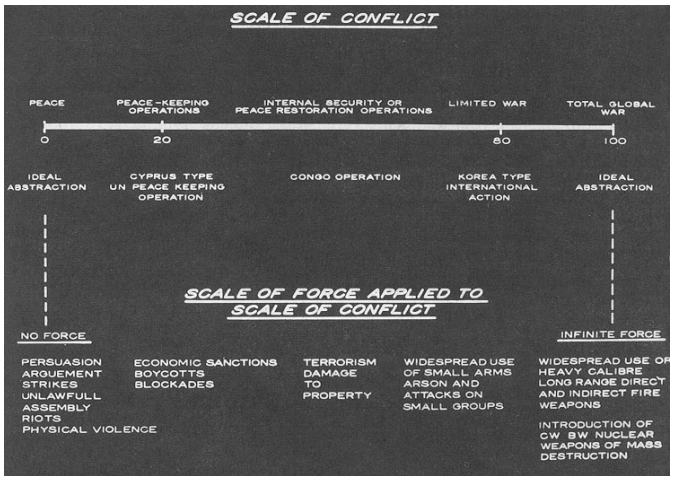
ATOB highlighted that there was insufficient liaison with Canadian naval authorities to meet mobility requirements: forces earmarked for Anti Submarine warfare (ASW) operations could easily become dual-tasked to provide sealift which would disrupt bilateral and NATO defence planning. Additionally, the Militia had to move away from National Survival and have some mobilization role if the field force was to be sustainable in either type of operation. The existing ceiling of 44,000 land force personnel was unacceptable if all of the White Paper's objectives were going to be met. Something had to give somewhere: either several commitments had to be dropped, or the force size increased.[22]

By July 1965, the planning group floated preliminary organization models. The group now included Lieutenant-Colonel George Bell and Major General Roger Rowley, both from ATOB, as well as Air Commodore Fred Carpenter. The Air Commodore had by this time been virtually exiled from the RCAF due to his scepticism over the NATO nuclear strike role with the CF-104 force. The recommendations, among other things, were that FMC be located at the former Air Defence Command base at St Hubert near Montreal and that additional former RCAF personnel be brought into FMC since they envisioned it to include four fighter squadrons and a light transport squadron. Notably, the planning group decided that no naval personnel would be included in FMC HQ. No reason was provided.[23]

Throughout this process, much discussion was conducted on what insignia should be used for the new command. Allard sketched one out at a meeting, but Major General Rowley pointed out that ATOB members "noticed that a US Army Division used a badge similar to that proposed for Mobile Command and that the Canadian Government Exhibition Committee had one almost identical." Allard's version, with some alterations by Chief of Personnel Admiral Ken Dyer, was adopted.[24] Initially, the name of the organization was to be "Force MOBILE Forces" (FMF) but this changed, probably since it might be confused with the American abbreviation for their "Fleet Marine Force."

Rowley was largely responsible for the form that Mobile Command headquarters would take. This structure had a major general as "Deputy Commander, Operations" double hatted as the Field Commander if a large portion of FMC deployed. There was also a Deputy Commander Operations Support, who would be the Deputy Force Commander if deployed. The field forces included 1 Canadian Infantry Brigade Group (1 CIBG), 2 CIBG Special Service Force (SSF), 3 CIBG, Divisional Troops (including 1 Canadian Division Signals Regiment), a Tactical Air Brigade as well as the Canadian contingents for United Nations Emergency Force (UNEF) and United Nations Peacekeeping Force in Cyprus (UNFICYP).[25]

Note that 4 CIBG in West Germany was not included in this organization. Note also that Mobile Command had no responsibility for Militia training, nor was there a staff structure in FMC HQ to support it. Allard was clear that, with regards to mobilization planning, "in view of the fact that we are operating on the forces-in-being principle, our mobilization capabilities will be limited to those forces already in existence." There were questions as to how much of the former Army staff functions were to be absorbed by Mobile Command, questions that were not fully answered. Where did the Army's former geographic commands, necessary for Aid of the Civil Power operations, fit? Who was responsible for training: FMC HQ or CFHQ? What about the former Army staff colleges? Who handled contingency planning FMC HQ or CFHQ? Who was responsible for the coordination of higher-level logistics? It is clear that by November 1965 Allard was more interested in getting FMC HQ established as rapidly as possible with a view to sorting out these details later.[26]



Our modern Spectrum of Conflict and Continuum of Operations are not all that new. In the 1960s, considerable effort was applied to understanding the types of conflict and the scale of force.

Forces Mobile Command Headquarters was officially stood up on 19 October 1965 (an event discussed in a previous issue of *The Army Training and Doctrine Bulletin*).[27] Major General Rowley and the newly promoted Air Vice Marshal Fred Carpenter were Allard's two deputies. With Governor-General George Vanier in attendance, Allard took the opportunity to focus on domestic concerns rather than international ones: I feel bound to ask French Canada to recognize the importance of today's event; indeed this step forward in the interests of national unity is a proof of the confidence which we have in the future of our country. As a French-Canadian, I take this occasion to thank Canadian Forces Headquarters [and the Minister of National Defence] demonstrating a deep understanding of the needs of French Canadian soldiers and giving them the possibility of seeing their country in familiar surroundings.[28]

It is clear that Allard used leverage with Hellyer to gain his primary objective: the creation and acceptance of a bicultural army. Mobile Command was the means by which he achieved it. The old Army with its attendant prejudices was supposed to be eliminated through unification and the new army or Mobile Command now allowed francophone advancement in ways that were impossible earlier. Mobile Command, however, still had to be capable of carrying out Canadian national security policy.

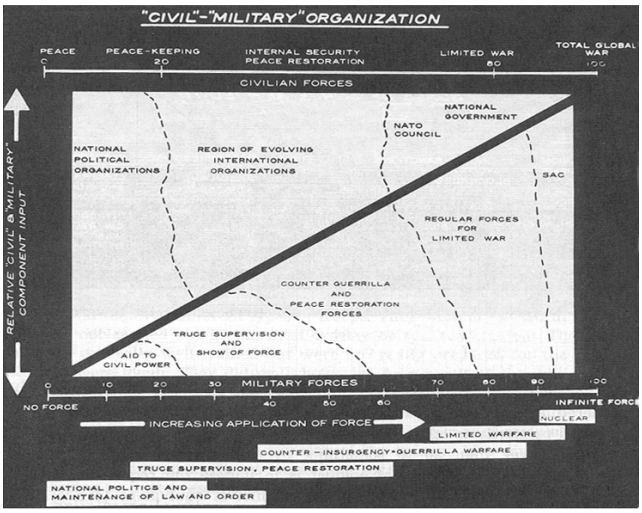
ALLARD'S MOBILE COMMAND VISION: 1965-1967

To gain insight into Jean Victor Allard's Mobile Command vision, it is necessary to refer to two processes. First, Allard understood that Mobile Command had to be 'sold' to parliamentarians who were looking over Hellyer's shoulder on the 1964 White Paper's implementation. This forced Allard's staff to develop a concrete concept of operations. This in turn was expressed through an FMC force structure study, Allard's interactions with public officials from the 1966 Special Committee on Defence (SCOD) and through an internal strategy document called Canadian Forces Publication (CFP) 165 *Conduct of Land Operations.*

The Mobile Command organization concept for 1965-66 reiterated the spectrum of conflict established by ATOB back in 1965. In a clear divergence from the ATOB view, the FMC Force Structure Study noted that:

> Because of Canada's special interest in peacekeeping operations, priority should be given to creating viable forces for this role. Since it is extremely difficult, if not impossible, to predict the force requirementsfor any particular peacekeeping operation, all elements of the field force must be organized and structured to permit rapid groupings tailored to meet specific peacekeeping requirements.[29]

Sean M. Maloney, Ph.D.



A further definition of the scales of force and conflict mentioned in the previous graphic. As the scale of conflict increases, the effectiveness of the civilian component decreases and the military aspect of the operation becomes more important.

Sometime in 1965 Mobile Command planners operating under Allard's instructions explored the concept of creating a rapid reaction force initially called a Commando Regiment. This idea in time evolved into a unit called the Airborne Regiment, which was to be made up of volunteers from the rest of Mobile Command, though it would not be formed until 1969.

The concept of operations for the lower intensity band of the spectrum of conflict, peacekeeping-internal security envisioned the deployment of the Commando Regiment into a target region first. This was followed by one of the brigade groups, which was structured for light airportable operations, with appropriate close air support. Logistics was to be provided by a 'Mobile Command Overseas Base', a command and logistic formation which could operate from a support ship or from an airhead which had been seized by the Commando Regiment. In a limited war scenario, the airportable brigade group would be replaced with a mechanized brigade group. Firepower and superior mobility for the Mobile Command forces were assumed to make up the deficiency in numbers which the force-in-being concept imposed on Canadian operations.[30]

With this concept as background, Allard invited the SCOD members to St. Hubert in June 1966 for a series of briefings.In its 1966 incarnation, FMC consisted of all four brigade groups including 4 Corps Mechanised Brigade Group (CMBG) in Europe, 408 Squadron (consisting of C-119 Flying Boxcar transports and T-33 trainer aircraft modified for ground support operations), a helicopter platoon, and an ambiguously-labelled 'Ready Force'. There was also a deployable component of FMC HQ led by Brigadier General Mike Dare, which included the 1st Canadian Division Signals Regiment and a number of personnel who were double-hatted from the main FMC HQ staff.[31]

Allard explained that Mobile Command was structured to fight across a scale of conflict (see page 10). Mobile Command's four brigade groups were to have specializations corresponding to the bands in the scale of conflict. The Ready Force was to handle disturbances and some terrorism, while the airportable light 1 and 2 CIBG were to be able to deal with terrorism and guerrilla warfare. The mechanized brigades, 3 and 4 CIBG were primarily structured to fight conventional warfare. Allard used the opportunity to make a pitch for new equipment for the airportable brigade groups. He believed that light tanks, portable anti-tank missiles, and helicopters were suited to the task. Light F-5 aircraft were necessary so that air support to all four brigades could be conducted from rough or unimproved airfields.[32]

The SCOD hearings did not reveal the important detail underlying FMC's concept of operations: it was a pitch for equipment as much as anything. CFP 165 Conduct of Land Operations, however, was the meat of Allard's Mobile Command vision. This document was an attempt to establish a 'unified field theory' of Canadian land and to a lesser extent, tactical air operations, for use by Mobile Command and CFHQ. CFP 165 covered a bit of everything, from nuclear strikes to the conduct of the withdrawal, to the roles of the combat arms in the field: it was a broad but comprehensive framework. That said, CFP 165's larger basis for operations and its discussions of Situations Short of War were groundbreaking from a doctrinal sense in Canada's land forces. As noted in Part I of this article, there was no formal Canadian doctrine for low intensity conflict prior to 1965.

CFP 165 was a logically laid out document that clearly situated land operations in the political and strategic continuum of the developing NATO Flexible Response strategic concept. Clear Canadian national objectives were established in CFP 165 based on the 1964 White Paper. The document also described several scales of conflict similar to those Allard used in his 1966 SCOD testimony: General War, Limited War, and Cold War. General War had "little or no restraint exercised by the belligerents" it was total and would include nuclear weapons. Limited War involved situations where "the vital interests of opponents are not immediately threatened" which resulted in a situation where there was "conscious restraint" in the "scope, intensity, and duration". Notably, CFP 165 stated that "what is 'limited' to one country may be a life or death struggle to another."[33]

Cold War, on the other hand:

> Near the lower end of the scale of conflict, limited war passes into the area sometimes referred to as cold war. Other terms in common use for this are: situations short of war, peace-keeping and internal security. The dividing line between Limited War and Cold War is neither distinct nor absolute. The basic characteristic of Cold War is the absence of armed conflict . . . in some cold war situations political, economic, and psychological measures may play a role equal to or more important than military strength.[34]

CFP 165's principles of operations revolved around the application of firepower, movement, protection, information, and a system of maintaining the land forces across the scale of conflict.[35] In effect, the scale of conflict dictated the scale of operational response, but the principles remained the same. What of the types of forces were to be employed across the scale of conflict? CFP 165 assumed that forces trained and equipped for the General and Limited scales could, without great modification, be employed on the Cold War scale. The only change was the addition of Special Patrol Units for deep penetration strategic or theatre recce tasks.[36]

Though most of CFP 165 dealt with conventional and nuclear operations (practically every section noted the influence of nuclear weapons on the given topic), it did point out to the audience the importance of being prepared to operate in jungle, desert, cold weather and mountainous regions. Raids and clandestine operations were mentioned, but not elaborated on. Several unallocated paragraphs probably meant that further study was underway. Adapting for air-mobile, airborne, and amphibious operations were also emphasized.[37]

CFP 165 took pains to describe operations in situations short of war.[38] The authors placed a caveat on this section and explained that such operations could include anything from an ACE Mobile Force-like show of force to a prolonged counterinsurgency campaign such as that in Algeria. Three operations types, however, appeared likely: "peace-keeping, internal security, and counter-guerrilla." Indeed, the authors noted that "a peace-keeping force might become embroiled with guerrillas or terrorists, and a successful counter-guerrilla campaign could lead to a need for peacekeeping or internal security operations." Whereas Army planners blurred the relationship between the three operations types in the early 1960s, Mobile Command's planners saw the possibility that three were distinct operations but could flow from one into another as the political situation in the area of operations evolved.[39]

Anticipating Army doctrine of the 1990s, CFP 165 emphasized the fact that military operations in Situations Short of War were only part of a continuum of political and economic activity designed to secure Canadian objectives in a region. In peacekeeping operations, the objective was to "prevent war by maintaining stability in an area of potential conflict until such time as a peaceful solution to the problem can be reached. A peace-keeping force, by itself, is not designed to bring about a permanent settlement." In any peacekeeping operation, CFP 165 recognized that "international public opinion is a major factor in the effectiveness of peace-keeping forces. The force must be able to establish an effective 'presence' in a dispute area … Impartiality also figures prominently in peace-keeping operations." Constabulary peacekeeping forces were not acceptable since "behind this 'presence' however, there must be force …"[40]

Internal Security operations were distinguished from peacekeeping operations since peacekeeping was the agreed-upon interposition between two or more belligerents. Internal security operations "oppose the overthrow of the established authority of one country." CFP 165 recognized that terrorism and insurrection could lead to organized revolution that in turn could prompt internal security forces to employ counter-guerrilla operations.[41]

In other words, CFP 165 did not adhere to a classical interpositionary model of peacekeeping operations (the UNEF model). It was based on UN experiences in the Congo and Cyprus where there was no 'thin blue line',[42] where belligerent forces might employ their own scale of conflict against each other and the peacekeeping or internal security forces. In this vein, peacekeeping was not the exclusive preserve of the United Nations in CFP 165's conception of Situations Short of War. Conversely, there was nothing in CFP 165 to say Mobile Command could not conduct an internal security mission or counter-guerrilla operation in a given country on behalf of or at the request of that country and the UN. Operations might conceivably include deploying Mobile Command to assist another country in its internal security operations (though one observer repeatedly insists that Mobile Command was specifically structured, equipped, and trained to intervene in Quebec against separatist forces).[43] Mobile Command's purpose, in Allard's words, was to "intervene and bust up dictators," not sit between the lines and hope for the best.[44]

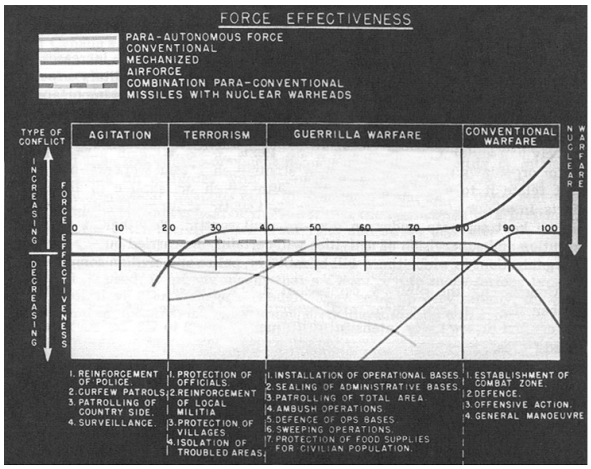
It is unclear how CFP 165 was received and understood by the personnel leading the forces assigned to Mobile Command. It is equally unclear as to how many people within FMC HQ bought into its conception of reality. Nevertheless, CFP 165 gave Mobile Command a doctrinal basis firmly rooted in a clearly expressed Canadian national security policy.

MOBILE COMMAND: RESTRUCTURING FOR JOINT OPERATIONS: 1964-1968

As we have seen, one of Paul Hellyer's objectives was to increase the mobility of the Canada-based brigade groups that constituted the balance of Canada's divisional commitment to NATO. What, however, was meant by mobility? Strategic mobility, tactical mobility in-theatre or tactical mobility on the ground? This was not clear to all involved. The strategic mobility project was well underway since 2 CIBG was rerolled as the light infantry Special Service Force to handle UN and Allied Command Europe Mobile Forces (Land) (AMF) (L) contingencies.

This left the two other brigade groups. These formations consisted of truck-mounted motorized infantry, towed artillery and Centurion tanks. They were not replicas of the Germany-based 4 CIBG, which had a plethora of fully-equipped infantry battalions, night fighting equipment, anti-tank guided missiles, observation helicopters, light aircraft, and nuclear weapons. A long standing project to acquire the Bobcat mechanized infantry combat vehicle family for all three NATO-committed brigade groups had existed since the 1950s, but their acquisition was delayed by the Diefenbaker Government. The

Bobcats were airportable and thus were expected to improve the mobility of the formations in all three senses of the word. The Bobcat project collapsed and was replaced with the M-113, which Hellyer championed throughout the convoluted procurement process. Similarly, Hellyer backed the acquisition of the airportable M-109 self-propelled gun to replace the towed 105 and 155 mm guns. As for armour, Hellyer and Allard believed that the Shillelagh missile-firing Sheridan light tank and Commando armoured car/wheeled armoured personnel carrier (APC) could replace the Centurion Main Battle Tank. The Sheridan and the Commando were also airportable. Hellyer also pushed the Pearson Government to acquire more helicopters.[45]



The theoretical force effectiveness of the various types of conflict along the intensity of conflict.

Other components of the mobility programme included the reduction of the number of personnel in the administrative tail, as there was a general belief that modern management methods would make for greater efficiency. All Canada-based units increased their training for strategic air movements. Wooden mock-ups of C-130 and Buffalo aircraft fuselages were constructed at Mobile Command bases so that loading could be practiced regularly. Indeed, a greater emphasis on readiness was evident with the implementation of the NIGHT TRAIN exercise series.[46]

Mobile Command was conceived as a joint command. As such, it had a significant organic air component. The requirements for the specific equipment had been established as early as December 1965. Mobile Command planners, building on work conducted by Army combat development studies in the late 1950s, determined that a number of aircraft types were required. First, a long range transport was required for strategic delivery. A medium range transport was necessary for in-theatre movement (parachute drops and resupply), while a short-range short takeoff and landing (STOL) aircraft capable of transporting an infantry platoon and an 'aerial crane' complemented the other machines. Mobile Command also needed "a tactical aircraft capable of surveillance, reconnaissance, interdiction, and close support." Such an airplane had to be capable of "world-wide deployment" and have a STOL capability; it also had to be able to operate from an aircraft carrier.[47]

To fulfil the in-theatre transport requirements, the Army's 1956 'air truck' concept was resurrected. The air truck had by this point evolved into the DeHavilland CV-7 Buffalo and DHC-5 Caribou aircraft types built to American specifications and in service with the U.S. Army by 1963. These STOL aircraft had the carrying capacity of a Chinook helicopter and could either land supplies or air drop them. Sixteen Caribou's and fifteen Buffaloes were acquired. The Caribou's went to Air Transport Command to be used on UN duty in the Middle East, while the Buffaloes went to Mobile Command's 429 Squadron in 1967.[48]

The ground support aircraft programme was convoluted and controversial, and requires more detailed study. The selection of a ground support fighter for Mobile Command was related to the Pearson Government's attempt to move away from Canada's NATO nuclear strike role. This commitment employed eight squadrons of CF-104 aircraft optimized for the delivery of nuclear weapons against Warsaw Pact targets. Replacing the CF-104s with non-nuclear capable attack aircraft that was compatible with Mobile Command's requirements was a viable means to move away from the nuclear commitment. Consequently, a massive purchase of Canadair-built Northrop F-5 Freedom Fighter was authorized in July 1965.[49]

The CF-5 was also championed by technophile Allard who was impressed with the possibility that a sophisticated sensor pod capable of radar and multi-spectrum photography could be acquired, so that Mobile Command could gather and process information more rapidly.[50] In time, 433 and 434 squadrons were equipped with CF-5s and joined Mobile Command in 1969.[51]

The 1960s were also the decade of air-mobility, with allied experiences dominating the doctrine: the United States in Vietnam, France in Algeria, and Britain in its decolonization wars. Where did helicopters fit into Mobile Command? The Army had used helicopters since the early 1960s but these machines were part of Army formations. For example, 4 CMBG had 12 Hiller observation helicopters, in addition to number of L-19 observation planes.

The 1965-66 Force Structure Study envisioned a helicopter battalion for each brigade group. Initially, each battalion was to consist of tactical transport and light observation machines. Medium-lift helicopters were relegated to the logistics organization at the Mobile Force Base.[52] By 1968, however, American experience with armed helicopters in Vietnam became known to Mobile Command planners and interest grew in acquiring ten AH-1 Cobra gunships for each projected helicopter battalion.[53]

Twelve Voyageur medium lift helicopters joined Mobile Command in 1968, followed by 50 UH-1 Iroquois tactical helicopters in 1970. When combined with the CF-5 and Buffalo acquisitions, these acquisitions prompted the formation of 10 Tactical Air Group (10 TAG) between 1969 and

1970, which then became part of Mobile Command. Other units, like the CF-5 training squadron and four reserve units flying Otters, were dumped on to FMC HQ by CFHQ. This produced strain on FMC's air cell, which was structured for tactical air support, not administration and training.[54] Cobra acquisition appears to not have been pursued for budgetary reasons.

Any discussion of Mobile Command's air capabilities should note the extraordinary potential of the Canadair CL-84 DYNAVERT. The CL-84 was a multi-role tilt-wing vertical takeoff and landing aircraft. Conceived in 1963, the first prototype flew in 1965. It could carry 16 troops or 4000 pounds of cargo: ground support versions were envisioned. In many ways the CL-84 predated the United States Marine Corps V-22 Osprey by thirty years. Troop trials were conducted by Mobile Command and the project reached the point where United States Marine Corps (USMC) and U.S. Navy tested the aircraft from aircraft carriers for possible adoption.[55]

As we have seen in Part I of this study, the Royal Canadian Navy was interested in developing a relationship with the land forces and had gone so far as to incorporate brush fire war thinking into its future plans and structures. This trend continued after 1964. The commissioning of the American 17 000-ton Landing Platform Helicopter (LPH) USS Iwo Jima in particular caught Maritime Command's attention. An LPH could certainly satisfy the requirement for a dual-purpose ASW and troop-carrying platform. It could also carry 25 helicopters and an infantry battalion. A staff study argued that Canada should acquire DYNAVERTs and two LPHs to supplement the aircraft carrier HMCS *Bonaventure*, which should operate A-4 Sky Hawk strike fighters to support land operations. Another study saw the fleet in three groupings called task groups, one of which would be tasked with brushfire and peacekeeping duties with an embarked Army contingent. The Iwo Jima did not fit all Canadian requirements, however. Her nuclear, chemical and biological defence (NBCD) capability was rated as low and she was untested in terms of conducting ASW helicopter operations in the North Atlantic. The class would require considerable modification if adopted by the Canadian Forces.[56]

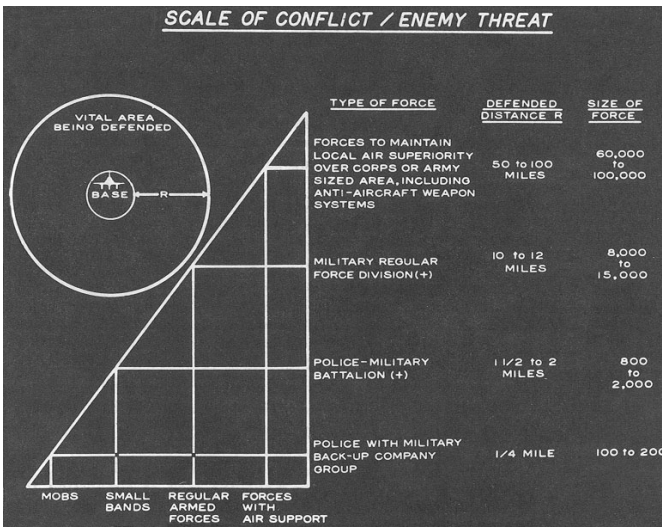
At the same time, the Navy determined which helicopter it would acquire to replace the few ageing S-55 and HOS4s it employed for experimental and rescue duties. The two contenders were the Piasecki HU2K and the Sikorsky HSS 2 (the Sea King). The Navy selected the Sea King because it had space for expansion of its ASW sensor and weapon systems, it had greater power and it could carry 25 soldiers, whereas the HU2K could only carry 10. Clearly, joint operations figured prominently in naval circles. The specifications for the three newly acquired operational support oiler replenishment ships (AOR) similarly reflected Maritime Command's interest in mobile operations. These vessels were designed with a limited transport and landing capability, essentially a light infantry company group or 200 vehicles, plus operate three Voyageur helicopters from the deck.[57]

Despite the developing relation-ship, there was still no naval representation in Mobile Command. Indeed, the prevailing notion in Mobile Command, no doubt championed by air (ATC) alumnus Air Vice Marshal Fred Carpenter, was that strategic air transport was capable of deploying Mobile Command forces more rapidly in a crisis situation. Paul Hellyer's bias against the Navy during this time should not be discounted either. That said, Mobile Command forces still worked with naval forces in the Defence of Canada role, but generally only on a small scale from a land force perspective.

The evolution of Mobile Command joint operations followed three streams: Defence of Canada Force (DCF), ACE Mobile Force (Land), and United Nations peace operations. By the end of the 1960s, Mobile Command units were well-versed in small-scale joint operations as opposed to their larger mid-and high-intensity wartime missions.

The Mobile Striking Force, as a formation, ceased to exist by the 1960s.[58] The Canada-U.S. continental defence commitment, however, still existed though the threat estimate had changed. The concern now was that, given the re-adoption of a strategic concept in which conventional operations were possible prior to the outbreak of nuclear war, the Soviets might attempt to use small airborne, trawler, or submarine-landed special forces to destroy vital installations.

One of the first DCF exercises was Exercise "Canlex" 64. 1st Battalion, Queen's Own Rifles of Canada (1QOR of C) was tasked by Mobile Command through 1 Brigade to develop a plan to protect or retake Canadian Forces Station (CFS) Holberg, the western-most end of the cross-Canada radar line. Two officers, one with Royal Marines assault training and another who was a graduate of the U.S. Army Ranger course, were put in charge of a 180-man composite company group. The unit trained for eight months. Boarding, embarkation, and disembarkation drills



A graphic representation of the number and type of forces would vary based upon the threat.

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"A terrific aircraft". As force mobility was important to FMC, the CL-84 Dynavert was developed by Canadair for a number of combat roles. Development commenced in 1963 and three prototypes were eventually produced. The Dynavert was capable of carrying 4,000 pounds of cargo or sixteen passengers. Here a group of soldiers demonstrates its troop-carrying capability in 1969. The U.S forces exhibited great interest in the Dynavert. Readers may note some similarity with the U.S. Osprey. (courtesy CF Photo Unit)

were developed, and a composite beach party was formed. Soldiers and sailors who had D-Day experience assisted and even produced old doctrinal manuals.[59] The DCF Company Group then boarded four Ocean Escorts (converted minesweepers) for the exercises. Tactical air support was provided by T-33s based out of Canadian Forces Base (CFB) Comox. Naval gunfire support was also used. The DCF company group then tracked down the enemy landing force, raided its base camp, and successfully protected the radar station.[60]

The amphibious exercises continued annually on each coast throughout the 1960s. These included Exercise "Mohawk" and Exercise "Yeoman". These involved nine Prestonian-class frigates, a diving support vessel with divers, and the Operational Support Ship HMCS Provider with her helicopters and landing craft (assault). A composite company group drawn from battalion of The Black Watch (Royal Highland Regiment) of Canada and several T-33 ground support aircraft participated.[61]

Similarly, ACE Mobile Force exercises involved some joint planning at the national level. AMF HQ (Land) and AMF HQ (Air) were located in central West Germany and reported to the Supreme Allied Commander Europe (SACEUR). If tension increased between the Warsaw Pact and NATO, the AMF would deploy forces to the region as a signal of NATO resolve. There were in effect four AMF's: two for the northern flank (Norway and Denmark) and two for the southern flank (Italy, Greece, and Turkey). The air units were not integrated into the land components, though they could be if necessary. For example, if SACEUR wanted aircraft to fly over the threatened area, it did not have to be linked to a land deployment. [62]

Originally, Canada committed two battalion groups to AMF(L) in 1964, one for each flank, but this was reduced to one to the northern flank in the late 1960s. AMF's concept of operations was based on the earmarking of battalion groups in peacetime and their deployment from their homelands to form composite multinational brigade groups in times of tension.[63]

This became a standing commitment and infantry battalions were designated to train for this role. They did not, however, have integral strategic or tactical air transport. Consequently, Mobile Command had to establish and maintain liaison with Air Transport Command. Mobile Command participated or conducted eight AMF(L) exercises in the 1960s, the most notable being the "Express"-series. HMCS *Provider* was employed during Exercise "Winter Express" in March 1966. *Provider* took over some of the deploying battalion group's equipment, including CH-113 Voyageur helicopters.[64]

Unlike DCF operations but similar to AMF(L) operations, UN Standby Battalion exercises frequently involved joint strategic and tactical air movement. One example was Exercise "Praetorium" PACIS held in 1967. A company group from 1st Battalion The Canadian Guards conducted an eight-hour air move from Trenton (0˚F) Ontario to Puerto Rico (90˚F) in the Caribbean. The Guards then moved to the island of Vieques to confront the enemy force but was forced to pull out. The extraction was carried out by the Sea King helicopters from the helicopter-carrying destroyers HMCS *Margaree* and *Ottawa* and supported by HMCS *Assiniboine*.[65]

The blurring of internal security, counterinsurgency, and peacekeeping was evident in many exercises undertaken by Mobile Command units. Exercise "White Elk" (1965) involving 1 QOR of C and the 2nd Battalion Princess Particia's Canadian Light Infantry (PPCLI) consisted of a multi-phase operation in which 2 PPCLI "in a United Nations role, [was] required to exercise great restraint" in a politically unstable country wracked with "mob scenes" and selective assassinations. The "UN troops" were then used to destroy a guerrilla force operating in a remote region.[66] Though many exercises were work-ups for UNFICYP (usually the strife ridden semi-tropical island of "Citrus" with "Greek Citriots" and "Turk Citriots" figuring prominently in the exercise scenario). 2 CIBG conducted the brigade-level Exercise "Poncho IV" (1967) which "simulated the deployment of 2 CIBG in a thinly populated emerging nation which was being subverted by a neighbouring country." 408 Squadron was brought in to conduct air strikes against the guerrilla forces.[67] Exercise "Park Bandit", a battalion-level scheme run by 1st Battalion, The Canadian Guards, involved an intervention into

the small country of Malaise. Canada was asked to assist the 'Malaisians' in their fight against an outside enemy infiltrating an area "amazingly similar to Algonquin park in size and vegetation."[68]

It is important to note that Mobile Command's global contingency planning was not just theoretical. If Mobile Command were to operate in areas outside of the NATO Area, a certain amount of expertise was required. For example, small training teams were deployed to Libya in 1967 and 1968 to develop expertise in desert fighting. In 1970, Exercise "Piute Lance" was held in the Mojave Desert in California: the bulk of 8th Canadian Hussars (Princess Louise's) in its Light Armour configuration was deployed by air. Similarly, an annual jungle training exercise series, NIMROD CAPER, was held in Jamaica. The UN Standby Battalion Group and the Buffalo squadron were usually involved.[69]

IMMOBILE COMMAND: POLITICAL PROBLEMS EMERGE 1966-1969

Parliamentary interest in the Pearson Government's implementation of the rather novel 1964 White Paper increased in 1966. It was two years since the paper had been accepted and its proponents were called to account by the Standing Committee on National Defence, chaired by David Groos.

Paul Hellyer was first to testify. After a general description of the restructuring, he was immediately questioned about the lack of Militia participation. Where did they fit in? Were they not an important component of Canada's national security structure? What about the role of tanks? Now that the Centurion was getting on, what would replace it? Members considered the CF-5 to have dubious value and could not understand where they fitted in. Wasn't Mobile Command supposed to be a peacekeeping force? Why did Mobile Command need to conduct close air support in a situation like UNEF? Hellyer was able to hold off these questions with non-information, though he admitted that there was a lack of strategic airlift.[70]

Allard's 1966 SCOD briefing was also superficial in important areas. The SCOD members immediately noted that there was a lack of discussion with regards to how, exactly, Mobile Command would deploy. Allard replied to such questions by pushing the responsibility to another plane:

> We have direct communication with transport command. We know what kind of aircraft they have. They do the planning for the air movement. We prepare the troops for them and we carry it out jointly. They are responsible to deliver us. We are responsible to bring the troops to them wherever the base is.[71]

When pressed, Allard told SCOD that Mobile Command's aim was to "have a completely air portable unit with all its equipment delivered as quickly as 48 hours." When SCOD members noted that there were not enough aircraft to do so, Allard admitted that if he had 15 C-5A Galaxy's he could "lift the whole shooting match across to Europe in no time at all." However, he said, "the point is, what do you do with these [aircraft] in the meantime" since he thought it would be more economical to have the C-141 Starlifter. Until someone made a decision, then, he would have to rely on the ATC Hercules fleet and Trans-Canada Airlines. Neither organization was capable of lifting Mobile Command's heavy equipment over long distances in a judicious fashion. Sealift was also examined by the SCOD, but Allard fended off detailed questioning by highlighting the use of the AOR HMCS *Provider* in an Allied Command Europe (ACE) Mobile Force exercise in Norway. All in all, Allard deftly deflected attention away from Mobile Command's deficiencies.

Mobile Command suffered primarily from a lack of strategic lift. The 35 C-119 Flying Boxcars and 29 North Star transports, the mainstays of ATC in the 1950s, were ageing and ill-suited for the types of operations envisioned by Mobile Command planners. Even the 12 Yukon turbojet-propelled strategic transports acquired in 1959 were deficient since these aircraft did not have the ability to tail load/unload, nor, like the North Star, could they operate in a non-permissive environment. The RCAF had purchased a small number of C-130 Hercules in 1960, but these were optimized to move CF-104's to Europe and back.[72]

The bulk obsolescence of the C-119's and North Stars was not handled well by CFHQ or the Pearson government. Sixty-four transport aircraft were replaced by 23 C-130 Hercules between 1964 and 1967. It is clear that the lift capability was not replaced tonnage for tonnage or sortie rate for sortie rate. By 1970, the 12 Yukons were showing signs of fatigue and were replaced with five Boeing 707s which were dual-tasked for aerial refuelling. The successor Trudeau Government then sold off the 15 Caribou's to Tanzania. Though the C-130s could operate in a rough and ready environment, they were forced more and more into a strategic lift role. The 707 was deficient since it could not carry heavy vehicles into a non-permissive environment. The dual-tasking of those machines produced a false economy since it was likely that both capabilities would be needed in a major crisis.[73]

The astute Allard had, however, ensured that a long-standing 1961 gentleman's agreement between Air Transport Command and the USAF's Military Air Transport Service (MATS) was formalized in 1965. This permitted Canada, in theory, to have access to MATS transports but only in "emergency situations where, because of geographic area of the airlift mission or proximity, the mission can be most effectively accomplished by the aircraft of the other force."[74] The obvious problem here was that Canada might have nations operations where the United States was not or unwilling to become engaged, thus leaving Mobile Command's strategic mobility to sway to the whims of American policy.

The lack of adequate strategic lift clearly reflected political compromise within CFHQ. The remaining former RCAF leaders more likely than not understood that the salient Canadian contribution to NATO and NORAD was the CF-104 nuclear strike force and the

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nuclear-equipped CF-101 Voo Doo and IM-99 BOMARC interceptors. Lugging around the land forces was the least glamorous of available aerial professions, particularly in a 'fighter jock' dominated culture.

Where the process set in motion by Hellyer with the 1964 White Paper was called integration, unification was the next move to create a single service with a single uniform and rank structure. Public commentators who had ignored these details suddenly became aware when the matter came up as a bill in Parliament. Those who felt aggrieved by Hellyer's treatment back in 1964 were now given expanded access to the media. This in part prompted further SCOD hearings into unification, which in time exposed defects in the Mobile Command concept and its implementation. By this time, however, Allard had moved on to become the CDS and Lieutenant General W.A.B. Anderson became Commander FMC in December 1966. Anderson and the VCDS, Air Marshal F.S. Sharp, were forced to come up with answers and attempt to clarify the ambiguities left by Allard, Miller, and Hellyer.

When asked about what Mobile Command was for, Sharp told the committee that the UN would continue to intervene "because of economic developments and the awakening of so-called backward countries" would produce a situation whereby the superpowers would fight proxy wars in those regions. Sharp implied more than once that Mobile Command would be turned over to the UN to act as an intervention force.[75] This did not go over well in some media circles: the prevailing notion was that Sharp thought that Mobile Command was to become the 'marine corps' of a UN army.[76]

Questions as to the role of the Militia were also raised again. This time Anderson was ready. A detailed study had been conducted within CFHQ, which had by this point established a Chief of Reserves, former 4 CIBG commander Major General Mike Dare. This elaborate plan included a Regional Reserve for aid of the civil power operations, a Ready Reserve of specialists to back fill those slots that had been downsized in 1965, and a Mobile Command Reserve. This last grouping was to "provide a training base from which Mobile Command can either receive reinforcements or be augmented by formed units." It was all somewhat ironic since Anderson was the man who recommended back in 1957 that the Militia be converted to a national survival re-entry force with no combat function.[77]

Just when the SCOD appeared to be satisfied with how Mobile Command was evolving, Rear Admiral W.M. Landymore raised questions about whether peacekeeping or police functions were compatible with the NATO mobile reserve functions. While SCOD was trying to separate the two ideas, Landymore then noted that:

> In relation to a democracy, I believe that you always have to build in safeguards to make sure that the freedoms . . . are protected . . . Here we have a huge command with one man in charge, and responsible, in fact, to one man. In view of that fact, I think it would be a very sensible move to split Mobile Command back into three regional commands because this at the same time would remove any hazard in this field.[78]

The SCOD members were flabbergasted, Mobile Command as a vehicle for a Coup d'état? *In Canada*? In this environment, questions were even raised about the possible use of Mobile Command in the controversial Vietnam conflict.[79] Landymore, out for blood, argued that Canada's security was at risk because the naval defence forces necessary to deter Soviet nuclear missile submarine attacks against Canada were withering because of Hellyer's obsession with Mobile Command and its "global policing role."[80]

The SCOD members were confused by what they were hearing and requested that retired General Charles Foulkes appear before it to provide his views on Mobile Command. Foulkes was concerned about the direction Hellyer and Allard was going. It was one thing to increase the mobility of the two Canada-based brigades so they could get over to Europe. It was quite another to employ them in "this world-wide pacification role." As Foulkes put it, "The question of this free-wheeling, globe-spanning, trouble-shooting role bothers me a little bit." It was "indefinite and all-inclusive" and Mobile Command was "a planner's dream - the whole world to work on, no limitations to spoil the fun, no tough commander to bring them back to realities." The former Chairman of the Chiefs of Staff Committee could not imagine how Mobile Command would be employed, though there was no shortage of "eager beavers who would like to see this country set itself up as the arbitrator in all world disputes." Would Canada actually use Mobile Command in a unilateral way to force nations to comply with UN resolutions?[81]

As for the UN, Foulkes speculated that the UN was becoming more and more adverse to the use of force, particularly after the 1960-64 Congo operations. He also pointed out that "white combat troops with their own built-in air support are not acceptable in solving explosive situations in Africa." UN peace operations would probably remain the interpositionary or observer type, not the Congo or Cyprus intervention type. As for Vietnam, the government "would have an awful time convincing the Canadian people to go into that kind of battle."[82]

Newly-retired Lieutenant General Bob Moncel was also questioned. With characteristic dry wit, Moncel played with SCOD members who were trying to gain political points with both the Opposition and the Government. Moncel was confronted by one SCOD member who wanted to know what Moncel thought about former Admiral Jeffry Brock's comment that, under unification, the tail was wagging the dog. Moncel replied, "I do not know what Brock said, and I am not a dog. I do not know how it feels to be wagged by one's tail."[83]

Moncel also conveyed his scepticism to the Committee without attacking Hellyer or Allard directly. He noted that future peacekeeping would not be like the operations conducted in

the 1950s since "the types you are going to have to go and intervene between are a far cry from the bare-bottomed chaps that we used to go and chase around. These new emerging countries are equipped on a scale that makes us toe the line." Pro-unification advocates attempted to call upon the authority of Viscount Montgomery of Alamein, who was pro-unification. Moncel dismissed such pandering: "Sure. This is the same chap who said we should have all bachelors in the Army."[84]

The next man on the SCOD chopping block was Lieutenant General F.J. Fleury, another newly ex-member of the Canadian Forces (CF). Fleury was able to cogently explain that converting the entire armed forces for peacekeeping operations did not mesh with the existing NATO and NORAD commitments. Canada could not afford to defend North America and Europe on the one hand and intervene effectively in the Third World. Hellyer was either trying to do both or the Pearson Government was trying to set the stage for Canada to go it alone and perhaps leave NATO altogether.[85]

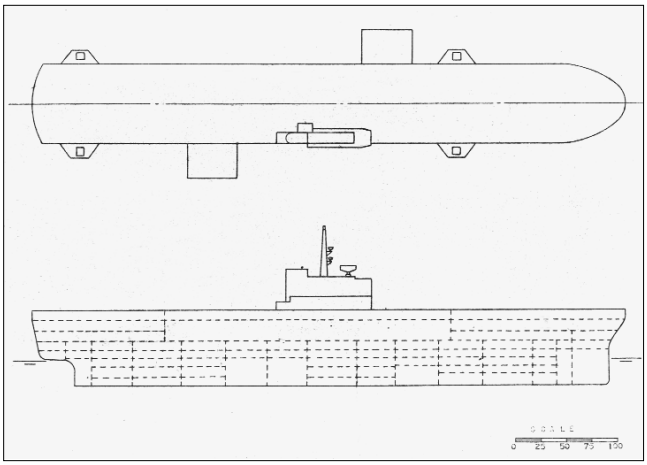
It was now time for Hellyer and his supporters to respond to the charges made in SCOD. After being reprimanded by the Committee for trying to intimidate Fleury outside of the committee room, Hellyer attacked the notion that Mobile Command was strictly for UN peacekeeping operations:

> That suggestion is tommyrot. If that were the objective, why on earth would we have launched a 1.5 billion-dollar, 5-year re-equipment programme? Why would we be acquiring self-propelled howitzers, armoured personnel carriers, armoured reconnaissance vehicles, anti-tank guns, anti-tank missiles, helicopter-equipped destroyers, ship to air missiles, modern submarines and fighter bombers-if the role was to be limited to peace-keeping? For that role alone, an order of blue berets and billy-sticks might suffice.[86]

Though he admitted that the equipment programme would take time and that there was a problem with air transport, Hellyer doggedly hung on to the Mobile Command vision. Having a separate force for UN duties was not economically feasible and in any event, the UN was not interested in standing UN forces. Mobile Command, he told them, had to be ready for anything, not just UN operations.[87]

Allard was brought in and followed Hellyer's lead. Questions about Mobile Command's suitability in a Vietnam-like conflict came up. Allard fended these off by explaining that, in his expert opinion and his reading of Mao, guerrilla warfare always escalated to the point where conventional operations were necessary to defeat the insurgents, therefore the Command's conventional capabilities were legitimate ones to have on hand. Mobile Command was, in his view, really designed to reinforce NATO commitments, not fight in Vietnam or guerrilla war, though some limited UN peacekeeping capability was contemplated. As for the CF-5's, their role was really surveillance, not ground attack, but the specific technologies were classified.[88] Former CDS Frank Miller's follow-up testimony confirmed that Mobile Command placed a higher premium on operations more violent than interpositionary peacekeeping of the UNEF type. Canada, his view, should not "be mesmerized by just having peacekeeping forces: you may get them and the next thing you need is a peace-restoring force, or a war force."[89]

After all was said and done, the SCOD members were astute enough to call in Guy Simonds, who regretted having used the U.S. Marine Corps analogy in the past. This analogy he believed, had muddied the waters and forced the debate into directions which it should not have gone. Simonds pointed out that the Marine Corps was in fact part of a larger American strategy and force structure which included four other services. American strategy could not be carried out by the USMC alone; it was deployed quickly and violently, then replaced with other forces. Mobile Command could perform a marine corps-like function, but there was nothing to back it up. Even peace-keeping operations might escalate and Mobile Command had to have the ability to reinforce or extract under fire.[90]



While the Army was developing force structure options, the Royal Canadian Navy conducted "assessment of cost of feasibility of construction" studies for vessels to aid strategic mobility of land forces. One such study was a variation of the U.S. Iwo Jima class ship to be used in an anti-submarine and mobile force troop landing and logistical role, dated 11 February 1963. The LHP-2 had a displacement of 10,731 tons and an estimated cost of $65 million.

Ultimately, several external factors affected Hellyer's and Allard's ability to completely implement the Mobile Command vision. The first was Minister of Finance Walter Gordon's budget cut to National Defence in late 1967. Hellyer and Allard had not laid the political ground properly in Cabinet and a lack of coordination on the Prime Minister's part produced a situation where defence policy did not jive with economic policy.

The immediate impact was that many of the equipment projects necessary for the implementation of the Mobile Command vision were eliminated or reduced to the point of irrelevance. For example, the plan to acquire V-150 Commando light armoured vehicles was cut, while the

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programme to acquire 20mm depleted uranium-firing cannons for the Lynx recce vehicle was abandoned. The CF-5's sensor pods were left by the wayside, and plans to acquire C-141 Starlifters were dropped. The Centurion replacement project, which envisioned acquisition of the sophisticated German-American MBT-70 or similar vehicle, was also deferred. Allard, who developed a new interest in sealift after the SCOD hearings, was unable to make headway in acquiring specialized craft. Manpower was slashed and the elaborate reserve force restructure plan never came to fruition. In the end, Paul Hellyer was replaced by Leo Cadieux, who became Minister of National Defence late in 1967.

The transition from the Pearson Government to the Trudeau Government in 1968 presented new challenges to Mobile Command. The Trudeau Government was not interested in UN peacekeeping and seriously explored an incremental withdrawal from the Europe-based Canadian NATO commitments. One option on the table was the complete elimination of the divisional commitment to the Central Region. By this point NATO had finally adopted in a formal manner Flexible Response (MC 14/3), a strategy based on LIVE OAK and ACE Mobile Force principles and one which placed a greater emphasis on conventional operations prior to nuclear weapons use. The Trudeau Government engaged in negotiations with SACEUR as to the future of Canada's land commitment to the Alliance. Eventually a compromise was reached: Canada would dedicate one of the Canada-based brigade groups to NATO's northern flank in either Denmark or Norway. This was the origin of the Canadian Air-Sea Transportable (CAST) Brigade.[91]

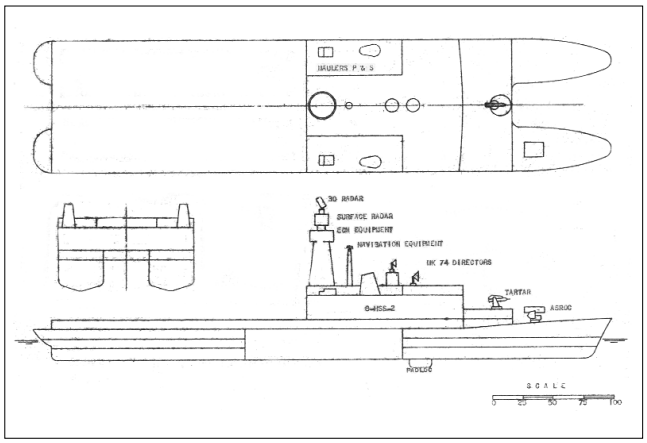
Despite the fact that its force structure was in a state of partial construction, Mobile Command had to plan for yet another commitment: Canada-US Region, ACE Mobile Force (Land), NATO Central Region, UN peacekeeping, limited warfare/counterinsurgency, internal security, and now CAST to the northern flank. Despite this, Mobile Command was reduced in numbers after a serious budget cut in 1969. This state of affairs amounted to "dangerous and dishonest multiple taskings."[92] There was still not enough sea or air lift. Mobile Command's largest operational deployment occurred during the 1970 *Front de Libération du Québec* (FLQ) Crisis, right after the headquarters took on the CAST tasking. The details of those operations, including the operational suitability of FMC for internal security and counterinsurgency operations, are dealt with elsewhere. It is ironic that 'Global Mobile' was employed on such a scale on an operation within Canada instead of overseas.[93]

THE 1970S: THE VIRTUAL AIR FORCE AND THE DEMISE OF FMC

The organizational disarray produced by integration and unification brought about even more institutional instability within the planning and operations sections of the Armed Forces well into the 1970s. The Trudeau government established a Management Review Group (MRG) in 1971 to ostensibly effect economies in National Defence. The MRG specifically identified overlap between the civilian National Defense Headquarters (NDHQ) and the military CFHQ. Operationally, a supporting study to the MRG praised the Mobile Command planning staffs for their superb execution of Operation "Essay", Operation "Ginger" (the FLQ Crisis), and Operation "Pelican" (the military response to the Kingston Penitentiary riot in 1971) while at the same time noting that CFHQ was too large. The MRG 'discovery' was that "the capability of the Forces is seriously diminished by the deficiencies of Headquarters and Commands in the management of their total resources." The suggested solution was to merge CFHQ and Department of National Defense (DND).[94] Clearly, the MRG was more interested in producing effective civilian management in the corporate sense to the detriment of CF operations, which the MRG took for granted would become efficient once the headquarters was reorganized.[95]

On the informal side, there was muted opposition within CFHQ to the new defence policy priorities established in the 1971 White Paper, which placed sovereignty protection and internal security above bilateral Canada-US continental defence, NATO, and UN peacekeeping. This had to be dealt with by the Government.[96]

The best way to examine this hydra-headed problem is to briefly examine the ebb and flow of the VCDS and DCDS since they were the organizations that were now supposed to handle joint planning and operations, not FMC HQ. In 1971 the VCDS included DCDS Plans which was subdivided into planning cells corresponding to the four defence priorities. In 1972, the VCDS had two DCDS groups reporting to him: DCDS Operations and DCDS Support. Operations had three deputies, one from each element (sea, air, and land) while the Support side had logistics, medical, and personnel. The DCDS Operations handled operational plans, training, intelligence and security. The difficulty was how could joint



Planning documents reveal the Royal Canadian Navy was keenly interested in "heliporter" vessels—several design options were under consideration in the early 1960s. One design studied by "Director General Ships" was for a 7900-ton Catamaran Heliporter, dated May 1963. The estimated cost was $48 million. One wonders if this had been built, it might have found a friend in East Timor.

operations be planned and conducted if the critical joint function, logistics, was under a separate DCDS? The situation was compounded when almost all of the corporate memory within the operations shops retired en masse in 1972-73.[97]

At another level, CFHQ and NDHQ were merged in 1972. This produced a hybrid civilian-military bureaucracy in which the VCDS (and thus the operations and planning staffs) became the bureaucratic equivalents of the civilian Assistant Deputy Minister (ADM's) for Policy, Personnel, Material, and Finance. DCDS (Support) was eventually eliminated in this process. However, on the negative side, the uniformed operational function of the new unified headquarters was now submerged in the civilian bureaucracy. Operations, the raison d'être of the armed forces, were now treated the same as the other four administrative functions, not as something unique, and it was continuously delegated to the commands without coordination. There was now competition and conflict between the newly-created ADM (Policy) organization and the operational organizations under the VCDS, which included FMC HQ.[98]

The VCDS Operations group was now split between ADM (Policy) and the new DCDS groups. As one study noted, "where does policy stop and operations begin?" This new structure produced increased meddling by the civilian ADM (Policy) staff in the minutiae of things that should have been the purview of uniformed planners and operators. For example, ADM (Policy) micro-managed certain issues such as side arm carriage by peace observation officers.[99] One CDS, General J.A. Dextraze, "saw himself as commander of the Canadian Forces but he no longer had full control of the operational staff instruments to carry out such a role."[100]

What were the effects of this reorganization? First the MRG process confused peacetime management of the system with command. Second, this was the second major shake up of the headquarters in five years and maintained the existing instability. Third, the merging of CFHQ and NDHQ produced a situation in which career primacy of the unformed side replaced operations primacy, which cut FMC HQ out of the loop. The uniformed side of NDHQ had to adopt the civil service's version of bureaucratic politics in order to compete with resources to get things done. This had a profound effect on operations. By the end of the 1970s, the CF, let alone FMC HQ, was virtually incapable of planning a joint operation from scratch and implementing it at the strategic level. The logistics system had deteriorated to the point that Canada could barely support existing overseas operations in situations other than wartime, and even that capability was suspect.

Wartime mobilization plans were hollow shells. For example, Operation "Pendant" was a joint reinforcement plan for Canadian Forces Europe (CFE) units and formations stationed in NATO's Central Region. 4 Brigade and 1 Canadian Air Group had been slashed in half in the 1970 defence cuts. The cuts had been made on the assurance that the cut portion of the brigade group would be flown back to Europe in an emergency. Yet Operation "Pendant", to the best of our knowledge, was never actually tested in an exercise throughout the 1970s and its air movements plan remained a bare outline as opposed to detailed allocation of air resources, troop numbers, and freight weights.[101]

Even the facade of Unification started to crack. One step was the creation of CFE, which placed a joint (in name only) command over the West Germany-based air group, unified logistics functions stationed in Europe, and 4 CMBG. Mobile Command therefore lost command over its prime heavy brigade group to what was perceived to be an extraneous and air-dominated command. This was more or less interested in supporting the three decaying CF-104 squadrons, which were converted from salient nuclear strike missions to rudimentary conventional attack missions.[102]

Former RCAF officers still in the system also took advantage of the disarray to resurrect an air force headquarters in September 1975. From 1968 to 1972, the senior airman was a brigadier general located in the VCDS group as DG Air Forces, while in the 1972 organization, there was a Chief of Air Operations (Major General) in the DCDS group. This was not considered fair by the nascent air force community since they did not have a lieutenant general with all element components under it, like the 'army' (Mobile Command) and 'navy' (Maritime Command). There was no centralized advice or direct access to the CDS for air matters, but no unified air voice speaking for the air components.[103]

In the air force view, there were "independent commands but no formal linkages" between Air Transport Command, Air Defence Command, 1 Canadian Air Group in Europe, let alone the air components in Maritime Command (MARCOM) and Mobile Command (10 TAG). There was, however, a 'virtual air force' since the former RCAF heads of various commands communicated informally on a regular basis. Air force orthodoxy, as expressed by the bureaucratic maneuvering of the 'air generals', felt that air doctrine was submerged in Unification. This manifested itself in the debate over the indivisibility of air power. Essentially, all air operations were part of a larger, unified continuum, not in support to the ground or naval forces.[104]

In 1974, the 'virtual air force' succeeded in creating a Chief of Air Operations in the DCDS group which pulled away land and maritime air operations from the land and naval operations people inside the DCDS plans shop. Cabinet gave its assent for this move in November-December 1974, probably because they thought it was economical.[105] In 1975, Canada-based air assets were consolidated under a lieutenant general in Winnipeg at Air Command. This included 10 TAG from Mobile Command, Maritime Air Group from MARCOM, the air administration from NDHQ, ATC (now Air Transport Group) and ADC (now Air Defence Group).[106] Interservice wrangling wrested the two CF-5 squadrons away from Mobile Command, while the Buffalo squadron moved to ATC late in 1970. 10 TAG eventually became an all-helicopter force dedicated to Mobile Command.[107]

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The 'air generals' justified their actions by arguing that the former Army dominated Mobile Command just as the former Navy dominated MARCOM. No former RCAF Air Marshal ever commanded Mobile Command or MARCOM. The fact that ATC and ADC were on par with Mobile Command and MARCOM in terms of having access to the CDS was ignored. The net effect of this was to destroy Mobile Command and thus Unification as originally conceived. The CF was back to having three services, albeit not in a completely legally recognized form.

ANALYSIS AND CONCLUSION

What was Mobile Command supposed to accomplish? Was it the cosmetic re-naming of diversely equipped and manned forces based in Canada? Was it a globally deployable strike force generator? Or was it something in between? In essence, the Mobile Command vision was an incoherent and partially implemented one that did not survive its two primary advocates: Paul Hellyer and Jean Victor Allard. There are several lessons to be learned from this doomed but valiant attempt to achieve an innovative force structure to meet a vague and perhaps incoherent Canadian national strategy.

The first relates to alliance saliency. Canada already had politically salient and operationally effective forces committed to NATO and NORAD. These were technologically sophisticated forces and critical to the implementation of NATO deterrence and warfighting strategy, which were the prime expressions of Canadian interests during the Cold War. That point was not made early enough during the unification debates which in turn clouded the issue since nobody explained that UN peace operations were really adjuncts to Canada's Cold War strategy and not something completely separate. Pundits and other public observers believed that Mobile Command was a vehicle by which Canada would transition from a NATO emphasis to a UN one and when that did not take place, confusion reigned. Any suggestion that Mobile Command replace those NATO-committed forces was politically unsound in any event.

The second lesson, and related to the first, is that the Mobile Command case illustrates the political problems of deploying light, air mobile/airportable forces in a combat environment dominated by heavy mechanized forces. In other words, the same 'portability' versus 'fightability' issue which the Army is confronted with today in 2001. The two Canada-based brigades of the NATO-committed division, if properly equipped and the strategic lift provided, were useful in the alliance context, as was the Special Service Force (SSF) which was salient in that the ACE Mobile Force was a critical assignment. Converting the two brigades into more sophisticated replicas of the SSF and not committing them to the Central Region did not endear Canada to SACEUR, particularly when NATO strategy was shifting to flexible response and a greater emphasis on the conventional battle to forestall nuclear weapons use. As exercises conducted by 4 CMBG and the U.S. Army's 101st Airborne Division in the 1970's would demonstrate, light air mobile forces were ineffective against heavy mechanized forces, were therefore not operationally effective in the NATO context and thus not militarily or politicallysalient.

A real Achilles Heel in the Mobile Command vision was the lack of a role for the Militia. The forces-in-being concept was acceptable for the 1950s when NATO strategy emphasized a 30-day nuclear war from the outset. It was not acceptable in a flexible response environment in which conventional forces were expected to be reinforced and to fight for 90 days before resorting to nuclear weapons use. Similarly, the forces-in-being in the small numbers anticipated by Mobile Command for low intensity conflict were unrealistic. Canada's allies, particularly France in Algeria and the British in Malaya, required less sophisticated, less professional forces in mass to provide a blanketing presence, while the sophisticated forces-in-being conducted specific, surgical operations. Mobile Command would have only been able to act as a vanguard force for others in such circumstances.

There are also serious warnings to be heeded. Trying to force an organization to be generalist produces a situation where it is jack-of-all trades and master of none. Similarly, the multiple tasking of units in diverse fields places too great a strain on the system from every angle except the financial one.

The Mobile Command case also illustrates the very real and continuing problem of coordinating equipment procurement with doctrinal and organizational developments over a protracted period spanning several governments and strategic change. A similar problem emerged with the case of the AVRO Arrow in the 1950s and the Bras D'Or hydrofoil in the 1960s. It will emerge again as the Canadian Army confronts the Revolution in Military Affairs in this new century.

In addition to the obvious civil-military relationship coordination problem posed by integration and unification, we must ask ourselves the question, did Mobile Command fit into the larger scheme of Canadian foreign policy? As Jean Victor Allard lamented to the author in 1993, "The Pearson and Trudeau governments never used Mobile Command. They didn't understand that they had such a powerful tool at their disposal." If the government doesn't understand how to use force, how can it employ it effectively?

In criticizing Mobile Command, it is extremely important that several positive aspects of the experience should not be buried beneath the cynicism of 'yet another Canadian military failure'. Mobile Command concepts which were built on existing Army combat development in the early 1960s provided a positive milieu for the mass introduction of helicopters and air mobility into Canada's land forces. Such machines subsequently proved to be useful adjuncts to heavy mechanized forces.

We should also give Hellyer and Allard some credit for the acquisition of self-propelled artillery and armoured personnel carriers in quantities sufficient to equip more than one brigade group. Though both projects were conceived back in the 1950s, Hellyer's political weight ensured that

these vehicles were delivered in a timely fashion. The mechanization, which had been advocated for years by the Army's combat developers, became a reality under Mobile Command.

The Mobile Command period was also the birth of Canadian joint operations involving all three services. Prior to the 1960s, Canada's land forces had little experience operating with naval forces, though there was already a decade-long relationship with the RCAF during the Mobile Striking Force period of the 1950s. Despite the problems imposed by the lack of formal naval staffing at FMC HQ, this relationship was permitted to evolve for some time, as were the command and control procedures necessary for the conduct of joint operations in a variety of circumstances.

Finally, we must credit the Mobile Command vision with getting Canada's land forces to conceptualize military operations outside of the Central Region and the NATO Area in an expanded fashion. It also forced planners to consider the minutiae of structuring and equipping operating forces to work in climatically and culturally diverse regions. This in turn contributed to broadening the land force's horizons, something which should not be derided out of hand since diverse perspectives and ideas are the lifeblood of any endeavour requiring innovation. Indeed, if the 1990s are an indication of how Canada will operate in the future, we may need to re-activate Mobile Command or something akin to it.

ABOUT THE AUTHOR...

Dr. Sean Maloney received his BA and MA from the University of New Brunswick and his Ph.D. from Temple University in Philadelphia. His military service included duty with the 8th Canadian Hussars (Princess Louise's) as a troop officer and the official historian to 4 Canadian Mechanized Brigade Group. His writing and research focuses on Canadian national security policy. Dr. Maloney's publications include *War Without Battles: Canada's NATO Brigade in Germany, 1951-1993* (1997), numerous articles and the forthcoming book *Learning to Love the Bomb: Canada's Cold War Strategy and Nuclear Weapons, 1951-1968*. He is currently the Social Sciences Humanities Research Council of Canada Post-Doctoral Fellow at The Royal Military College of Canada, where he also teaches in the War Studies. Dr. Maloney is a regular contributor and consultant with the *Army Doctrine and Training Bulletin*.

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Civil Disorder and the Canadian Soldier Overseas

What Do We Do? The Palladium Experience

by Major Wayne Eyre

During the period March to September 2000, the author deployed to Bosnia on Operation "Palladium" as the Officer Commanding the Drvar rifle company, part of the 3 PPCLI Battle Group. Given Drvar's recent history, namely the April 1998 riots, responded very capably by the 1 RCR Battle Group, which were the worst case of inter-ethnic violence since the signing of the Dayton Accord, the Stabilization Force (SFOR) Headquarters considered this one of the greatest civil disorder threat areas in Bosnia. With the advent of several high profile and potentially destabilizing events (the first municipal elections since the 1998 riots, the removal of the Bosnian-Croat 1st Guards Brigade from Drvar, the commencement of housing evictions, and the change in the balance of population from a Croat to a Serb majority), fulfilling the mandate of maintaining a safe and secure environment meant training and rehearsing for the possibility of further ethnic based civil disorder. This article reflects the lessons learned during this contingency preparation, which continued throughout the tour.

INTRODUCTION

The role of Canadian troops deployed on peace support operations is generally to develop and maintain a safe and secure environment, whether to enforce a cease-fire, provide an environment conducive to the delivery of humanitarian aid, or to allow other peacebuilding measures to flourish. The primary threat to accomplishing this role may initially be a military one, with armed uniformed or non-uniformed belligerent forces being our primary concern. However, many occasions will arise when the greatest threat to a secure and stable environment will be civil disorder, either organized or spontaneous, in the form of a violent riot, where military forces are not the primary perpetrators.

As on domestic operations in Canada, the first responder to civil disorder must be the local civilian police. Unlike Canada, however, local police in a theatre of operations may be non-existent, or unable or unwilling to intervene during civil disorder episodes, despite the presence of international police monitors.[1] In the worst instance, local police may be even involved in actively inciting the disorder.

When local police cannot deal with civil disorder, and it threatens the maintenance of a stable and secure environment, responsibility for it falls, by default, to the peacekeeping forces in location—us. We cannot launch combat operations to deal with civil disorder, and we are not authorized to conduct riot control. DCDS guidance on riot control training for overseas missions is very specific:

> … the CF will not develop non-military capabilities for which it does not have a mandate—e.g. police duties such as crowd and riot control. CF units deployed on overseas missions are deployed as combat units with specific capabilities that do not include the capability to operate in a gendarmerie role. Unless specifically authorized by NDHQ, CF units will not undertake riot control operations.[2]

There is an apparent contradiction between our mission and national policy. To ignore a threatening situation due to a constraining national policy could quite possibly result in mission failure. As with many issues, nothing is black and white, and Canadian soldiers have successfully operated within the bounds of this policy, exemplified both during the Drvar Riots of 1998 and actions in Mitrovici, Kosovo, this year.[3] Thus the purpose of this paper is to discuss what our actions should be during civil disorder while deployed on peace support operations, including combined operations with specialized riot control troops. The material contained in this paper is based on experiences with SFOR in Bosnia, and thus the discussion and examples will primarily be in that context.

CIVIL DISORDER

Civil disorder was defined in SFOR as extreme illegal activities which included intimidation, usually by one ethnic group over another; aggression, usually in the form of harassment of one group by another; and riots, entailing sustained and organized violence that could involve different ethnic groups responding to specific events.[4] Although the first two categories were certainly prevalent in Bosnia, our focus in this paper will be on riots.

Impending civil disorder.

Major Wayne Eyre

Riots form for a variety of reasons and begin with the gathering of a crowd. Although crowd psychology is a subject unto itself, for our purposes it is essential to know that a crowd can adopt a 'mob mentality' very quickly, especially with the assistance of skillful agitators. A crowd can quickly become a riot if certain preconditions are in evidence. Some of these preconditions, which may exist overseas, are: frustration at unexpected economic and political expectations; unhappiness or uneasiness over the return or arrival of another ethnic group; unhappiness with the actions, or lack thereof, of the international community; actions or presence of an adversarial group; and, finally, susceptibility to propaganda and manipulation. While many riots are or appear to be spontaneous, it is also possible that a group or their leaders will deliberately plan riots to further their aspirations.

Given a comprehensive patrol program and an effective HUMINT collection plan, it is generally easy to forecast or detect the formation of a crowd. It is harder to predict if that crowd will remain peaceful or turn violent. A useful tool we used was to compare indicators. Figure 1 is an example of this, based upon an actual situation which arose when a senior officer from one ethnic group was sentenced for war crimes in the Hague. The ethnic group he was from had a population majority in the town and held all real power, despite the mayor being from the other ethnic group. A march was planned to protest this sentencing.

POSITIVE INDICATORS OF A RIOT
• The same ethnic group had staged violent riots two years before, and was now upset with the continued repatriation of the other ethnic group and planned housing evictions.
• The ethnic group was very susceptible to propaganda and manipulation by its leaders.
• The veterans' organization planning the march had radical, nationalistic ties, and had been involved in other violent riots.
• Approximately three-quarters of the Entity Armed Forces (EAF) brigade in town had served under the sentenced officer during the war.
• The senior witness for the defence of the sentenced officer was a power holder within the town who had been removed from the municipal government by the international community.
• Five other suspected war criminals of the same ethnic group were to be arrested in another part of the country on the same day (it was unknown if this was common knowledge, but this had to be assumed).
• Interpreters working for other international organizations told them it would be advisable to leave town the day of the march.
• The parade marshals (required for security by local law) were identified as known hard-liners and thugs.
• Our patrols learned that all businesses were to close before the march.
• EW intercepts picked up discussions warning individuals to leave town and information that some bars were serving free alcohol.
• Only half of the local police members were on duty and the chief of police decided to take the day off.
• No vehicles were parked in the downtown area, which was not the norm.
• IPTF [International Police Task Force] was extremely concerned about the march.
NEGATIVE INDICATORS OF A RIOT
• The EAF brigade commander promised that his soldiers would be confined to barracks for the duration of the march and that their dependents would not participate in it.
• The organizers of the march stressed it would be peaceful.
• Our checkpoints outside of town indicated no increase in 'thugs' entering town.
• There was no increase in vehicles lacking license plates in the town, which would have indicated an increased criminal presence.

Figure 1: Comparison of Indicators.

Weighing indicators against each other is highly subjective, based upon experience and a detailed knowledge of the dynamics of the area of operations. In the example cited, the indicators weighed in favour of the march turning into a case of civil disorder, so we had to act accordingly. Fortunately, violence did not materialize and it remained peaceful. This tool was used throughout the tour to determine our response and readiness level.

THE ROLE OF CANADIAN UNITS: CROWD CONFRONTATION

Our national direction is quite clear—we do not engage in riot or crowd control operations. These operations are clearly offensive in nature. That is, a force approaches the crowd with the intent of dispersing or detaining it in order to reestablish civil order. Such offensive operations are not Canadian policy. However, during the course of our mission to provide a secure and stable environment, we may be confronted with a civil disorder situation where appropriately trained and equipped riot control forces are not immediately present. To avoid stepping into the realm of riot or crowd control, our reaction must be inherently defensive. To that end we use a set of nebulous defensive techniques to contain hostile crowds, with a view to negotiating a reduction in tensions and/or buying time for the deployment of riot/crowd control forces. These techniques are known as crowd confrontation drills, and are fully authorized:

> Mob confrontation training can and should be conducted as an adjunct of general purpose combat training, whether in domestic, peacekeeping or combat operations. Unanticipated mob confrontations might occur during the execution of military tasks and troops must have the training to react to secure themselves without jeopardizing the task at hand. But this must not be confused with or expanded into training for a proactive role in suppressing riots.[5]

These defensive techniques are characterized as nebulous because we have no definitive doctrine on crowd confrontation drills. In the past, when we still trained for riot control, there was abundant reference material, but since our mandate has changed we appear to avoid the topic altogether. Given this lack of doctrine, units have been left to their own to develop crowd confrontation techniques.[6]

Given the limitation of using standard issue integral vehicles, weapons and equipment,[7] the task of defending an objective from a hostile

Crowd confrontation drills.

crowd, or keeping two hostile crowds apart, can be problematic. With the above limitation in mind, any intermediate technique developed has its basis in the threat of the application of deadly force. To the soldier on the ground with few options, the escalation to deadly force may be swift. This rapid escalation to deadly force in a civil disorder situation could have strategic level consequences, especially if media is on scene, that will in turn have a direct impact on overall mission success. Equally, not employing deadly force when appropriate could cause as a minimum local mission failure, loss of credibility, and friendly casualties.

Various methods of crowd confrontation have been exercised and used, and several will be mentioned here. A line of soldiers dressed in flak jackets, helmets and face shields[8], with weapons at the port, form an imposing barrier in front of a crowd and flexibility is retained. The primary disadvantage is they can easily become entangled with the crowd, perhaps necessitating a rapid escalation to deadly force.

What is required is a barrier to place between our soldiers and the crowd to allow some standoff distance, and thus avoid decisive engagement. A hedgehog of fixed bayonets is intimidating, and will provide standoff distance if properly employed. Soldiers must be well briefed on rules of engagement issues, and well trained in bayonet drills. If the rules of engagement are too restrictive, the bayonet can be pushed aside and a problem similar to that in the preceding paragraph exists.

One method that was employed with relative success was the use of razor wire, held in place by a line of soldiers utilizing wire gloves. This allows a gap to be maintained between our soldiers and the crowd, thus providing the necessary standoff distance. There is a loss in flexibility of movement and, as proven during training exercises, a determined crowd will find methods to attempt to rip it away.[9]

Regardless of method, as a force of last resort, we must be prepared to employ deadly force immediately, in accordance with applicable rules of engagement, if required. To that end, sharpshooters and snipers should be employed to provide overwatch on the crowd, and the surrounding area. One technique that worked well was to employ sharpshooters, elevated above the line of friendly troops on AVGPs, covering the near ground including the crowd. Snipers would be deployed further back covering the far ground and flanks. Vehicles are employed as the ground allows, preferably behind the line of troops, for deterrent value, increased firepower, and rapid withdrawal if necessary.

The issue of pepper spray for self-defence was very topical during our preparations, as it would have been very useful as an intermediate step before having to resort to deadly force. Unfortunately, its issue is a matter of controversy and was never seriously considered during our deployment.[10]

Fortunately, it appears that the trend now at least NATO on peacekeeping missions is to have earmarked units with specialized riot control training as a secondary skill, or gendarmerie-type units whose primary function is dealing with civil disorder.

SPECIALIZED UNITS

Within Bosnia, and specifically Multi-National Division (South-West) (MND[SW]), we had two units available to us with special riot control capability. They trained with us as required to maintain interoperability, generally in preparation for upcoming operations.

The first, and primary, unit was the Multinational Specialized Unit (MSU) Regiment, based on gendarmerie units from several different nations, with the majority from Italy and Argentina. The MSU consisted of police forces with military status, who operate with military style discipline and chains of command. The primary tasks performed by MSU included presence/deterrence patrolling, information gathering activities, and civil disorder operations.[11] They were

Crowd confrontation drills.

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MSU Company deploying forward.

generally organized into platoons of 21 police officers and companies of three platoons. They conducted extensive reconnaissance visits of the entire theatre, concentrating on areas with greater potential for deployment.[12]

MSU civil disorder operations involve a transition of control of the situation from the SFOR troops on the ground to the MSU commander at a time mutually agreed upon by the two commanders. The area of operations for the MSU was termed the "Blue Box" and they would have control of the situation within this area. Details on their operational concepts will be discussed below, but before beginning it must be emphasized that the MSU would bring several key capabilities to the situation. Firstly, they provided general deterrence, since, for a variety of reasons, their role was understood by the local populace. Secondly, they were trained in negotiation techniques, and would generally negotiate first, combined with deterrence, before escalating their response. Finally, and most importantly, was their ability to intervene with a riot control capability.

For the most part, MSU riot control techniques were impressive and proved effective in combined training. Of note, before the MSU would conduct an intervention, they would require a minimum of two platoons, so reaction time could be an issue. It is also important to note that the MSU would only deploy and remain deployed against an unarmed crowd. If shots were fired or weapons displayed, control would revert back to regular SFOR troops and the situation would be dealt with using appropriate force. MSU platoons were equipped with specialized armoured riot control vehicles and could also be deployed by helicopter. They could also, with Commander SFOR approval, employ riot control agents such as CS gas.

The second riot control force available was the primary division reserve, based upon a rifle company of the British Battle Group. This company was trained and equipped to conduct more robust and aggressive riot control than the MSU, and generally would be employed if the MSU intervention proved unsuccessful. Examples of this robustness was their ability to absorb Molotov cocktail (gasoline bomb) attacks without resorting to deadly force, a willingness not shared by the MSU, and their use of baton guns to neutralize and detain instigators. They were prepared to deploy with either Warrior APCs or armoured Landrovers, or by helicopter if necessary.

TRIGGER	ACTION
30 or more persons at a PS or increase in tension at PS (subjective – based on IPTF, OSCE [Organization for Security and Cooperation in Europe] and roving patrol reports)	• Increase two reserve platoons (-) (4 and 6 Platoons) to five minutes notice to move • Camp security turned over to Admin Company • Roving patrol to observe PS • Increase readiness of OH 58 • Confirm activities of local police
First indications of inter-ethnic protests, shouting or demonstration of possible violent intent at PS or anywhere in town.	• One AVGP section (4 Platoon) to PS • Incident Control Point (ICP) activated • Confirm and encourage local police actions • Crowd < 40 persons – 4 Platoon (-) to intermediate staging area • Crowd > 40 persons – 4 Platoon (-) and 6 Platoon (-) to intermediate staging area • Deploy OH-58 • Second MSU Platoon requested
Definite indicators of impending violent acts at PS: angry crowds, pushing, agitators present, rocks gathered. This is a judgment call, based on advice from IPTF and OSCE supervisors.	• Pressure local police to act (if possible) • 4 Platoon (-) to PS, placed to be able to intervene between crowd and PS if necessary. • 6 Platoon (-) moved to forward staging area • MSU Platoon in intermediate staging area • Request BG Reserve Platoon. Deploy it to intermediate staging area • OH-58 loitering, not over crowd • IPTF requested to bring senior politician to PS. Roving patrol to escort
Large crowd about to become violent	• 4 and 6 Platoons (-) intervene between crowd and PS • Designated personnel on loudhailers telling crowd to disperse • MSU moves to holding area • Second MSU Platoon enroute • BG Reserve Platoon forms outer cordon • OH 58 moves to position to film crowd. Sends back reports to CP • Roving patrols monitor progress of crowd from far side
Large crowd riots at PS	• 4 and 6 Platoons (-) conduct crowd confrontation drills at PS • BG Reserve Platoon on outer cordon keeps crowd from growing in size • OH 58 continues overhead filming activities • MSU intervention at mutually agreed time

Figure 2: Decision support matrix for municipal elections.

MULTI-NATIONAL RESPONSE TO CIVIL DISORDER

The response to civil order must be proportional and escalate as required, however when faced with a quickly deteriorating situation, timely and decisive action is often preferable to a graduated and piecemeal response. Generally due to time and space limitations, an early assessment must be made. This may be extremely difficult, and pre-positioning of riot control forces may be necessary. A useful tool to assist with determining the requirement to preposition and deploy forces is a Decision Support Matrix. Figure 2 is a much scaled-down version of a matrix developed as a contingency response to civil disorder during the April 2000 Bosnian municipal elections in the MND (SW) area of responsibility. For this operation the Battle Group (BG) Reserve Platoon was co-located, one MSU platoon was available immediately, and a second was 45 minutes out by helicopter. As well, two US Army OH-58D surveillance helicopters and a ground downlink station from SFOR Air Operational Reserve were attached under tactical control. The intermediate staging area was two minutes travel time from the election Polling Site (PS), while the forward staging area and MSU holding area were the same, located approximately 100 metres from the crowd, out of sight behind buildings.

At the first sign of trouble, it is the responsibility of local police, ideally being monitored by the IPTF, to diffuse a tense situation and initially deal with a civil disorder situation. The IPTF may take a more active role and may indeed become involved in the negotiation process in order to ensure its success. However, it is preferable to involve the local police to the greatest degree possible to lend them credibility.

At the outset of any potential civil disorder situation it is necessary to have SFOR patrols monitoring the situation in order to provide timely and accurate reporting. These patrols can initially be small, but their strength will have to be increased as necessary to maintain force protection. As well, the patrol must be able to react immediately to protect the safety of IPTF monitors.

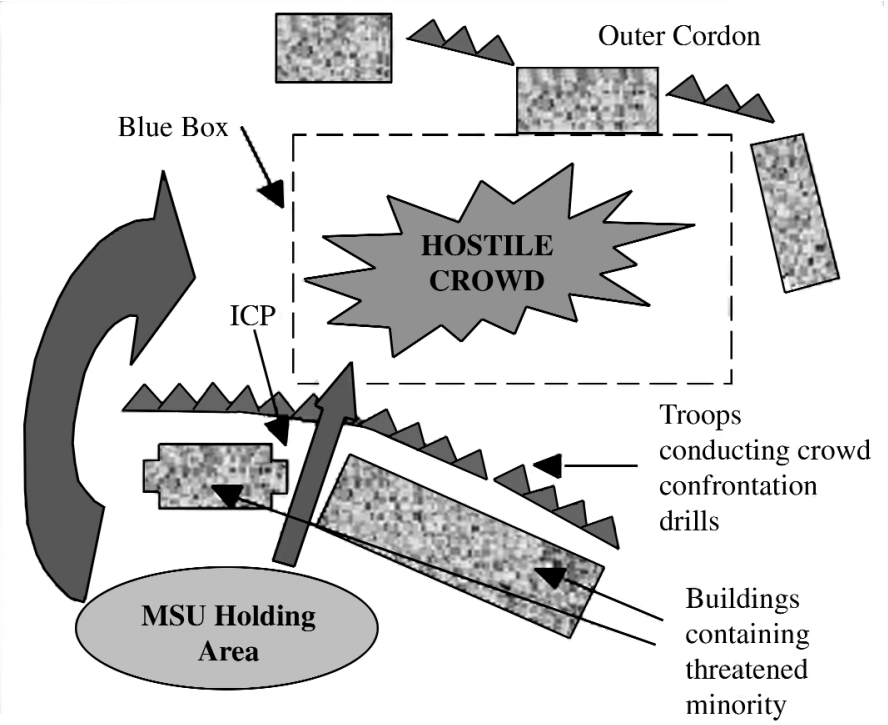

Figure 3: Multinational response to hostile crowd threatening minority population in two buildings. MSU can conduct frontal or left flankings.

If it appears that the local police are unable to handle the situation and it will get out of control, SFOR troops must be prepared to intervene. This must be done carefully, and a determination must be made if an SFOR show of force will further agitate the crowd or convince it to disperse. The SFOR response may be graduated, depending upon the situation, but an overwhelming show of force may be what is required to diffuse the situation. If absolutely necessary, the force will interpose itself between the crowd and the objective being protected, or between belligerent groups, using defensive techniques as discussed earlier. The aim remains to ensure a stable and secure environment.

An incident control point (ICP) is established early in the process. The ICP comprises the SFOR commander (the on-site commander), the MSU commander (if on scene), and the IPTF commander, along with necessary communicators and other personnel deemed necessary. It retains complete flexibility to move and should be located close enough to observe the disorder, but far enough away so as not to become engaged.

If the defensive techniques employed by the SFOR troops are not sufficient to diffuse the situation and disperse the crowd, a joint decision is made by the SFOR and MSU commanders for MSU intervention. As mentioned earlier, the MSU must have a minimum of two platoons, or more if the situation warrants, before intervening. The SFOR troops, still using crowd confrontation techniques, form a firm base from which the MSU can launch, either from a flank or by passing through the SFOR line. Depending on the situation, the MSU can conduct a forward passage of lines (perhaps through gaps in the wire made just as they approach), or the SFOR troops can conduct a rearward passage of lines. SFOR troops can provide fire support in the form of flank and far ground security with the use of snipers and sharpshooters. Casualty and detainee evacuation support can also be provided for the MSU.

Another likely task to support the MSU is the provision of an outer cordon. The purpose of this cordon is to attempt to stop the crowd from growing larger through either a deterrent presence or a scaled down version of crowd confrontation techniques, or both. Each

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cordon team must be large enough to cater for force protection and must be placed such that it does not become a focus for the crowd. It must act as a "one way valve"—that is, it should attempt to keep additional people out while concurrently allowing people to disperse. Figure 3 is a graphical representation of a reaction to a hostile crowd.

If the MSU cannot handle the situation, they will withdraw and control reverts to the SFOR troops, who deal with the situation using military means. This may mean an escalation to deadly force by the troops conducting crowd confrontation drills. At this point, if the Division Reserve is available, they will be committed.

The Division Reserve Company launches into the crowd in the same manner as the MSU, with the in-place SFOR troops providing the same support. The Division Reserve will prosecute the operation as long as possible. Depending upon the flow of the operation, the on-site commander may reinsert the MSU and withdraw the Division Reserve Company.

Although both organizations shun the idea, it may be desirable at times to employ the MSU and Division Reserve simultaneously, either on parallel axes or side by side, to achieve maximum concentration of force and thus have the greatest shock effect.[13]

Once the situation is under control and the crowd has dispersed, the specialized riot control elements are withdrawn, and SFOR troops once again become the primary force, until such time as the local police can exert control over the situation. The on-site SFOR commander stills retains overall control during this disengagement of forces, and must be prepared to react if the disorder reappears or moves to a different location.

COMMAND AND CONTROL ISSUES

The command relationship of Tactical Control (TACON), under which the MSU was deployed, was generally found to lack flexibility, and a common understanding had to be reached with each MSU commander regarding command and control procedures. Although, technically speaking, control within the Blue Box goes to the MSU commander, the SFOR commander as the on-site commander retains overall command. Despite their special skills and sometimes confusing employment criteria, specialized riot control forces such as the MSU should be utilized as just another manoeuvre element, albeit with specialized skills, that integrates into the combined arms team.

Complicating their employment was the inevitable language barrier, which at times caused mis-understandings. If nothing else, the on-site commander's intent and command relationships must be the first things established upon arrival. This includes a complete understanding (and hopefully shortcutting) of any 'national' authority required before committment.

The MSU was generally released TACON to Battle Group command level, but due to the time and space involved, authority was generally secured to devolve this down to sub-unit level. The operating procedure we established was that the sub-unit commander would remain the on-site commander until it became necessary to commit another sub-unit (including the MSU or Division Reserve). If the Battle Group commander was on scene, he would become the on-site commander at this point, and the battle group net would become the command net.

CONCLUSION

Despite extensive contingency planning and multi-national training against a backdrop of continued interethnic tension and ongoing rumours of imminent disorder, the situation in our sector remained calm. Unfortunately this has not and will not always be the case in all of our overseas peace support missions. To counter this there are many who argue that we should return to possessing a full riot control capability for overseas operations. This is a debate that should occur, if for nothing else than to validate our current and future missions and expected tasks. In the meantime however, we must be adequately prepared for our current responsibilities.

On recent, more robust peace support operations we are not alone when it comes to dealing with civil disorder situations. Chances are, however, that we will stand alone for at least a short period of time before appropriate riot control forces can react. Because of this it is essential that the Army, as the primary force generator for these operations, develop a workable doctrine and practical tactics, techniques and procedures for crowd confrontation drills, and ensure that we are properly trained and equipped to meet the challenge. This also means ensuring that release authority for equipment (e.g. face shields and pepper spray) is devolved to a level that is realistic for force protection. Combined training must also be conducted with in-theatre riot control forces to ensure interoperability. Furthermore, we (the collective 'we', including the Canadian people and government) must be prepared to accept that the less progress we make on development of these intermediate measures, the more rapid will be the escalation to deadly force.

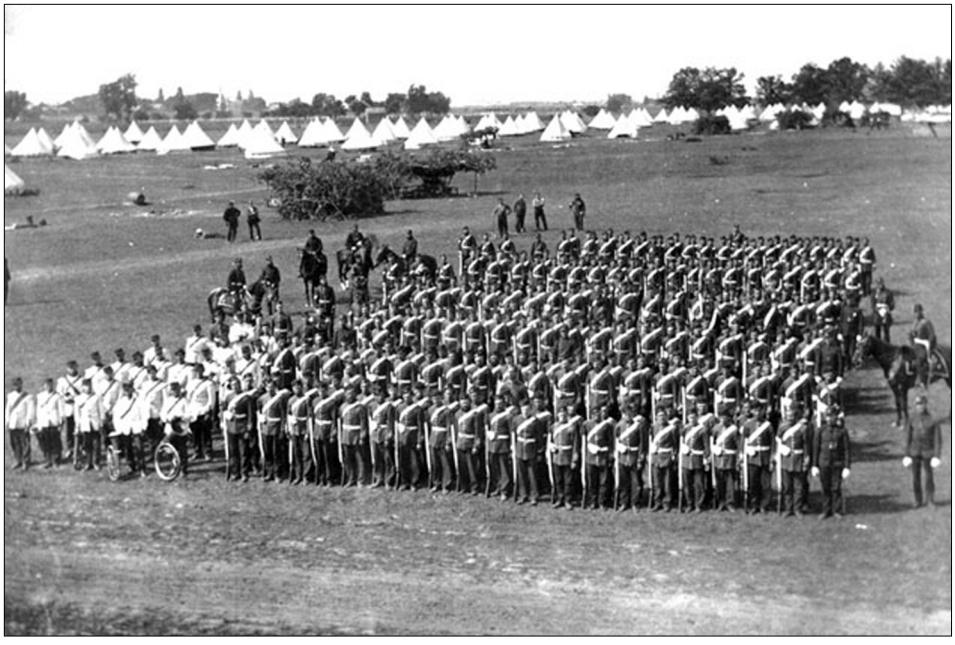
The use of military forces against disorderly civilians is not generally a desired task. It is dirty business that may have very far-reaching effects. However, in our profession we cannot take half measures and the success of the mission comes first. We are the force of last resort and must be trained and equipped to act in that capacity.

ABOUT THE AUTHOR...

Major Wayne Eyre holds a BSc from The Royal Military College of Canada and is a graduate of the Canadian Land Force Command and Staff College and the U.S. Army Special Forces Course. He has served two tours with the 2nd Battalion, Princess Patricia's Canadian Light Infantry, as a rifle and reconnaissance platoon commander, with service in Cyprus and Croatia. Major Eyre wrote this article while serving as Executive Assistant to the Commander Land Force Western Area, and is now a rifle company commander with the 3rd Battalion, Princess Patricia's Canadian Light Infantry.

ENDNOTES

1. In Bosnia, these monitors are the United Nations International Police Task Force (IPTF), the organization tasked with monitoring and mentoring the local police.
2. *DCDS Guidance on Riot Control Training for Overseas Missions*, DCDS message 235, 191530Z November 1997.
3. In the preparation of this paper while overseas, the author had access to much of the after-action reports of the Drvar Riots. Unfortunately, the same was not true for the actions in Kosovo, from where there are undoubtedly many valuable lessons learned.
4. *MSU Techniques, Tactics and Procedures*, 20 December 1998, p. 9.
5. *DCDS Guidance on Riot Control Training for Overseas Missions.*
6. CCSFOR FSOP 2/2/7 31 Mar 97, which should be the guiding document for these drills for Canadian troops employed in Bosnia provides no firm detail and is outdated.
7. *DCDS Guidance on Riot Control Training for Overseas Missions.*
8. During Operational "Palladium" Roto 6 the release authority to issue and wear face shields was normally retained at the national command level, unless the forecasted threat dictated a downward delegation of authority. In the case of a spontaneous incident, authority would be required before face shields could be issued from company (or in some cases battle group) stores, raising the distinct possibility that troops would already be deployed lacking proper protection.
9. This method was used by the author while as a rifle platoon commander in Cyprus. A hostile crowd, intent on crossing into the Buffer Zone, easily forced their way through two lines of civilian police but came to a standstill when they hit razor wire held in place by a Canadian company. Control of the crowd was then quickly reasserted by police. Conversely, when this method was employed during an exercise, a determined OPFOR effectively ripped some wire away using expedient grappling hooks.
10. The distribution of pepper spray was similar to that of face shields. It was centrally held and required national release authority. A spontaneous civil disorder situation would quite possibly be over before pepper spray could have been issued.
11. *MSU Techniques, Tactics and Procedures*, p. 3.
12. During Operational "Palladium" Roto 6, the MSU spent a total of approximately 13 weeks in Drvar, at times in company strength.
13. Much to the chagrin of both organizations and the MND(SW) staff, this technique was used to great success by the CO of 3PPCLI BG during the civil disorder Exercise "Encouraging Lion", conducted in May 2000, aimed at preparations for the move of 1 Guards Brigade of the VF-H from Drvar.



For years, the militia camp at Niagara provided a venue for soldiers to learn their craft. The 13th Battalion, Volunteer Militia Infantry is shown here on parade at Niagara Camp in the summer of 1871. (Courtesy National Archives of Canada PA-28627).

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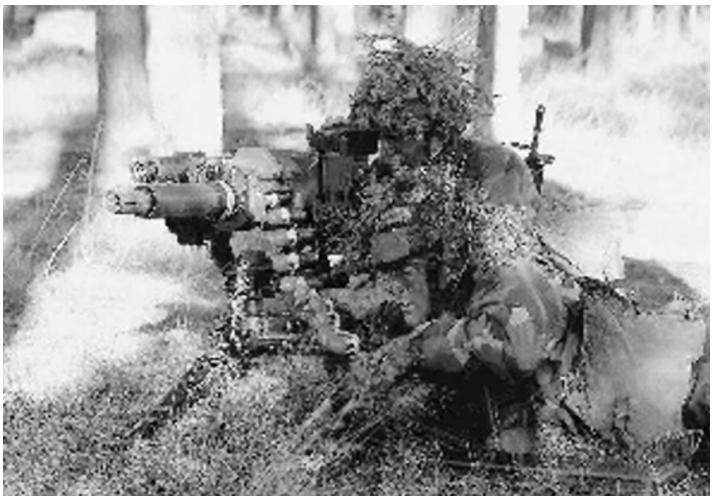
Tactical Impact of Removing Anti-Personnel Landmines from the Army Inventory

by Roger L. Roy, Senior Operational Research Advisor to the Commander LFDTS

In December, 1997 the *Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and Their Destruction* was signed in Ottawa by 126 nations calling for the elimination of anti-personnel (AP) landmines. The Anti-Personnel Mine Ban Treaty imposes a number of new limitations on the types and use of anti-personnel weapons available to Canadian commanders. Limitations include a total ban on the use of non-discriminating, victim-initiated anti-personnel weapons, and on the non-discriminating emplacement of any other lethal anti-personnel weapon in areas where non-combatants are either the primary targets or at risk due to their number in the target area. These limitations affect the mix of offensive and defensive options available to a commander to ensure operational success. There is still an essential requirement to retain anti-personnel obstacles as part of the overall anti-personnel system to ensure the protection of troops in combat and non-combat operations, and to optimize the effectiveness of weapons during combat operations. In recent years, new weapon systems, surveillance devices and smart mines have been introduced into the inventory of most armies, providing new and sometimes overlapping capabilities. Therefore, before replacement technologies can be identified and developed, a decision must be made if the capability requires replacement or if other current systems sufficiently fill the gap.[1]



HISTORICAL USES

Weapons such as AP mines are considered unfair, since they enable their users to kill from a distance and behind cover, with the victim being chosen indiscriminately and unable to retaliate.[2] Mines have been considered insidious, treacherous things, hiding in deep grass and in the earth;[3] those who used them have been considered unchivalrous, murderous, barbarous, unorthodox and uncivilized. But mines work, not necessarily determining the outcome of battles, but helping to delay troop movements and spread debilitating fear.[4]

AP mines can be traced back to devices such as traps, concealed spikes and stakes employed by ancient armies to enhance fortifications or to change terrain to advantage, concepts almost identical to those of contemporary landmines.[5] Explosive mines, using gunpowder, were first used in the American Civil War, particularly by Confederate forces to counter the imbalance between the competing armies. The Civil War brought electrical initiation (greater reliability) and pressure-operated mines. Mines affected morale far more than their actual power of destruction. Despite their widespread use, landmines only post-poned the outcome of the war; they did not alter it.

By the dawn of the twentieth century, most regular armies had land-mines. Despite the massive scale of the First World War, the use of AP mines was not widespread because new weapons of the industrial age gave rise to defensive tactics and technology that marginalized them.[6] Barbed wire across no-man's land, machine-guns and artillery could stop a massed infantry advance at least as well. Although the success of AP mines in the First World War was not great enough to encourage reliance on them, they were important as "shock weapons" instilling terror through the ranks of the enemy, because they could strike any time without warning.[7]

The use of AP mines during the Second World War saw a growing shift of focus from a singular device that was designed to cause fear or destruction to the individual, to a multifaceted AP weapon system that stressed a full-fledged concept of area control. The Germans greatly influenced mine warfare because they produced reliable, economical, simple and durable mines, including new, more lethal AP mines with ever more sensitive means of initiation. A highly effective German tactic was to wait until the enemy had infiltrated well inside the minefield and only then open fire. An American soldier recounted: "At the first sound of exploding mines, the Germans would lay down protective fire; some men

elected to remain erect through intensive fire rather than risk falling on a mine."[8] New devices, such as the German *Schrapnellmine* (or S-Mine) which was activated by pressure on prongs or by a trip wire to produce shrapnel, marked a significant technical improvement on the early fragmentation devices.

On the Eastern Front, both the Soviets and Germans used millions of mines. The Soviets preferred large minefields and considered mines "a mass and indispensable weapon for all ground troops." They were the first to use mines as offensive weapons. As to their handling of defensive fields laid by their enemies, the Soviets attacked head-on in mass waves and used herds of cattle, dogs, POWs and humans to clear paths through uncharted minefields.[9]

In the Pacific Theatre, although the dispersed style of fighting and dense vegetation lent themselves to mine warfare, Japanese mines were hastily prepared, improvised and ineffectual.[10] The Japanese tried to install and scatter mines as a hindrance to advancing troops, but the US Army was able to either remove or quickly demolish them using bulldozers and tanks.

In Korea, failure to record AP minefields was a serious problem. For example, Australian forces suffered 50 casualties when they unwittingly entered an unmarked, unrecorded minefield. The Chinese also took advantage of the limited number of roads and thick undergrowth to interdict repeated nightly patrols using their own mines. The use of mines, trip flares, barbed wire, and planned mortar fire became a feature in front of defensive positions.[11] New methods were adopted for mine laying:

> Minefields NOT covered by fire are of little more than nuisance value. They may cause a few casualties. They may give warning of an attack, but other methods (e.g., trip flares) are equally efficient by day and more efficient by night. By themselves, minefields will certainly never stop an attack.[12]

Improvements in AP mine warfare capability were made in the 1950s and 1960s. The Canadian C3A1 (or Elsie) AP mine offered vast improvements over its counterparts in that it was small, made of plastic, and was quick to lay. Bar mines and scatterable mine systems offered a great economy in manpower and logistical effort.[13]

In Vietnam, AP mines were a constant threat to the Americans. The Viet Cong were masters of ambush, and scattered mines throughout an area rather than in well-defined minefields on a scale never before encountered by US forces.[14] Many of their mines were crude booby traps locally made of tin cans, bamboo tubes and unexploded American ordnance. The VC created fearful respect for these weapons: "Just the knowledge that a mine or booby trap could be placed anywhere slowed combat operations."[15]

Although AP mines have played only a small part in wars of manoeuvre in the late twentieth century, such as the Arab-Israeli conflicts, they have been used extensively in guerrilla warfare and nationalist struggles against colonialism such as in Mozambique, Angola and Rhodesia. AP mine use was ideally suited for terrorist fighting and engaging in guerrilla warfare, and encompassed area control and psychological operations. The Soviets made heavy use of mines in Afghanistan to interdict supply routes and the guerrilla trails that were used to support the Mujahedeen in the field.[16] In most of these conflicts, AP minefields, containing plastic mines undetectable other then by physical probing, were laid by hastily armed, irregular soldiers and civilians with little or no training in mine warfare. Consequently, unrecorded, unmarked AP minefields proliferated.

AP mines have become major problems after conflicts because there was no effort to clear them. Most mines were laid in close proximity to areas frequented by civilians. Victims of AP mines were often the people whom they were supposed to protect. Since the deployment of AP mines was often indiscriminate and irresponsible, this has led to massive and continuous post-conflict civilian casualties.

In spite of exaggerated claims, the percentage of battle casualties caused by mines is comparatively small, representing about 2-4% of those wounded or killed in action. Most casualties in the Second World War and Korea were caused by "fragments" (i.e., shrapnel from artillery, rockets and mortars), while rapid-fire infantry weapons such as the AK-47 rifle changed the primary cause of deaths in Vietnam to small arms fire, although mines and booby traps caused 11-15% of casualties. Nonetheless, the effects of AP mines did not always lie in the ability to inflict casualties, but in slowing down operations.

ARGUMENTS FOR THE BAN

In 1996, the International Committee of the Red Cross (ICRC) published an analysis of the military use and effectiveness of AP mines.[17] In the 26 conflicts considered, they maintain the historical record demonstrates that:

- few instances can be cited where AP mine use has been consistent with international law or, where it exists, military doctrine, and
- even when they were used correctly, AP mines have had little or no effect on the outcome of hostilities, even when deployed in large numbers.

Weapon	Second World War		Korea		Vietnam*	
	Deaths	Wounds	Deaths	Wounds	Deaths	Wounds
Fragments	53%	62%	59%	61%	36%	65%
Small Arms	32%	20%	33%	27%	51%	16%
Mines & Booby Traps	3%	4%	4%	4%	11%	15%
Punji Stakes						2%
Other	12%	14%	4%	8%	2%	2%

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Active and retired military officers have challenged the claims that AP mines magnify the usefulness of other weapons. One former US Marine Corps Commandant has stated that

> I know of no situation in the Korean war, nor in the five years I served in Southeast Asia, nor in Panama, nor Desert Shield-Desert Storm, where our use of mine warfare truly channelized the enemy and brought him into a destructive pattern … I'm not aware of any operational advantage from [the] broad deployment of mines.[18]

An increasing number of armies are renouncing the use of AP mines on the grounds that other munitions are an acceptable substitute with less long-term effects on the civilian population. If Claymore-type munitions were only designed to be used by command detonation, and did not include a tripwire firing system, they would be an acceptable alternative to the normal blast and fragmentation-type mines. Such munitions are easily emplaced, and equally easy to remove when no longer tactically relevant.[19]

ARGUMENTS AGAINST THE BAN

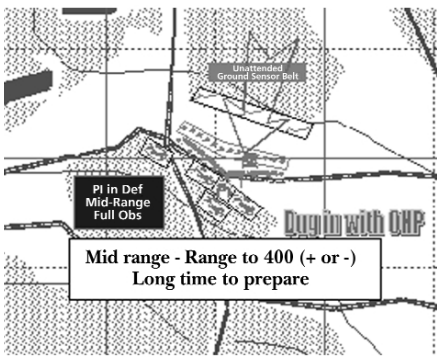
The central military argument in the debate over AP mines has been that such weapons constitute an irreplaceable military capability and are indispensable weapons of war. In a 1992 report, the US Defense Intelligence Agency (DIA) said that:

> even with relatively costly new technologies, land mines are an affordable weapon for the entire range of military organisations … [and] … will continue to be a significant element in armed conflicts at all levels of inten-sity well into the fore-seeable future.[20]

TACTICAL EMPLOYMENT	
Protective Obstacles	(e.g., protect small units and installations)
Tactical Obstacles	(e.g., protect AT minefields)
Static barrier perimeter infiltration)	(e.g., cover blind avenues of approach, prevent border/
Other Obstacles	(e.g., deter removal of craters/abatis)

One study prepared by the Institute for Defense Analysis (IDA) assessed the usefulness of land mines in "high intensity, mechanised land warfare." Results using the Janus combat model showed casualties for a US battalion deployed in a purely defensive position increased by about 10% when all AP mines were removed but by a massive 70% when both anti-tank (AT) and AP mines were removed.[21] In a *1997 Report to Congress on the Anti-Personnel Land Mine Use Moratorium*, the Pentagon claimed that US casualties would rise by 35% in the European theatre and by 15% in Southwest Asia if the military was unable to use AP mines.

Although the U.S. has not become a signatory to the Ottawa Treaty banning all AP mines, they have tempered the calls for elimination with concerns about maintaining the ability to deter conflict and reduce the risk to US armed forces. In the most recent policy refinements, the US has stated it will sign the Ottawa Convention by 2006 if suitable alternatives to AP mines and mixed AT systems can be identified.[22]



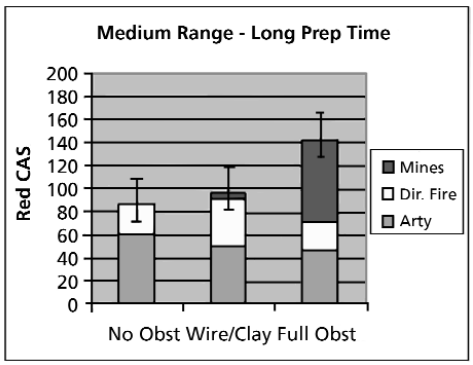


Figure 1: Janus Scenario and RED casualties using different obstacles.

Defence planners also recognized that AP mines create major hazards when used irresponsibly in pursuit denial and to prevent general occupation.[23]

FUNCTIONS OF AP MINES

Defence leaders in Canada fought against the destruction of AP mines, arguing that if used properly against military targets they had a role to play in protecting troops.[24] Replacing the AP mine is a matter of delivering its capabilities by other means. It was agreed at an Engineers Workshop that most operational applications of mines could be categorized using four types of obstacles.

PROTECTIVE OBSTACLES

Protective obstacles are laid in restricted areas, relatively close to one's own positions, to cover routes from which the enemy might attempt a silent approach or a sudden mass assault. Results of Janus war games showed that a platoon could succeed in defending against a dismounted battalion attack with AP mines but not with wire and Claymores. First, Red had an effective smoke screen so Blue depended on mines to provide the kill mechanism. Second, it was found that Claymores laid near the defended positions were vulnerable to indirect fire.

The scenarios were repeated with different weapons usage by the defender. First, instead of using Claymores only as a last line of defence, a field of Claymores was laid in the gap, using 45 Claymores instead of the 10 to 16 from the previous scenarios. Another option replaced the 60mm Mortar in the platoon with an Automatic Grenade Launcher (AGL), with a second AGL located in the supporting section from a flanking platoon. It was shown with these scenarios

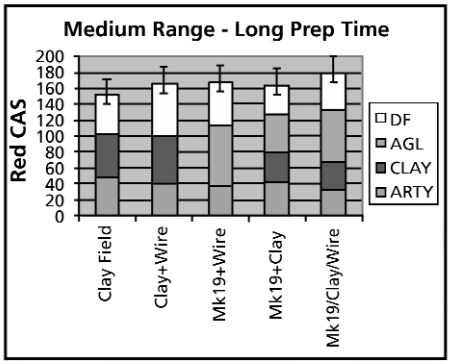


Figure 2: Striker 40mm Advanced Lightweight AGL and RED Casualties.

that using Claymores (with no wire obstacles) further ahead of the defended position and/or using 40mm Automatic Grenade Launchers (AGLs) along with wire obstacles provide a capability that helps to compensate for the loss of AP mines.

TACTICAL OBSTACLES

Tactical minefields are classically used to block routes of expected enemy mechanized advance. Although mechanical breaching (required in the presence of AP mines) is faster than dismounted breaching, dismounted breaching allows armoured vehicles to remain protected until lanes are completed. Thus, it is important to continue to provide a means to prevent or severely disrupt dismounted breaching operations.

The use of anti-handling devices to replace the protective functions of AP mines in mixed minefields was examined in a quick look U.S. study.[25] Table 1 shows the results of an analysis of the time required to clear a 5 meter wide, 100 meter long lane executing a daylight dismounted breach of AP/AT minefields and AT-only minefields. The initial analysis of an AP alternative concept with radio controlled detonation showed a clear advantage. The use of a motion sensor instead of trip wires would negate the use of grapple hooks and would increase breaching times significantly since the detection/neutralization of AP mines would have to be done by hand, thus requiring over two hours work by a field engineer troop.[26]

STATIC BARRIER

As a static barrier, AP mines serve two main purposes. The first is to deter potential adversaries from crossing the barrier, the second, to provide early warning during infiltration. South African forces, in the struggle against insurgents, used a border system which is claimed to have resulted in no accidental killings or civilian casualties. This involved the use of perimeter demarcation, harmless mechanical and electronic sensors, and command-detonated Claymore-type directional fragmentation munitions visibly mounted on posts 6 meters above the ground. This system eliminated the traditional risks associated with minefield maintenance, as the system could simply be switched off, allowing for safe passage by forces, civilians and cattle under appropriate conditions.[27]

OTHER OBSTACLES

To enhance craters and/or abatis, both AT and AP mines are useful. AT mines prevent easy repair with plows or backhoes, and the AP mines deter manual repairs thus forcing a delay. Buried AT mines with anti-handling devices should provide the required delay.

POSSIBLE ALTERNATIVES

Solutions put forward to end reliance on AP mines have proposed alternatives to perform similar functions with new technologies, while elimi-nating the human suffering and destruction of the socio-economic fabric following a war. Most concepts identified by those involved in seeking alternatives, include:

- sensors to detect and locate intrusions,
- command and control systems to direct a response, and
- lethal mechanisms to deliver and provide AP mine effects.

Motion detectors, cameras or laser beams can provide early warning, automatic detection of intrusions and a silent alert of an infiltration. Wire entanglements can further delay infiltration. RF or IR links to a computerized Decision Support System can provide information to help discriminate combatants from non-combatants and shorten the decision cycle to direct a response. Claymore-type fragmentation munitions, mortars, artillery, machine guns and rifles can be used to deter armed infiltration.

Non-lethal weapons (NLW) have been singled out as possible alternatives to AP mines since they do not need to have a man-in-the-loop. Acoustic and optical technologies that cause pain and discomfort have the potential to be developed into AP obstacles and it is possible to envision how they may be useful assets in peace support or humanitarian operations. But NLW fall significantly short of being able to replace AP mines in a war-fighting environment. It is unlikely that NLW would provide desired or comparable levels of effectiveness to conventional AP mines.

ESTIMATED TIME FOR DISMOUNTED BREACH (MINUTES)
(5-m wide, 100-m long lane)

	Buried		Surface	
Dismounted Task	AT/AP	AT only	AT/AP	AT only
Grapple†	20	0	80	0
Sweep (Two Operators)	15	12	8	4
Mark/Place Charges	1	1	1	1
Back-out/Detonate	3	3	3	3
Check Lane	2	2	2	2
Total	41 minutes	18 minutes	94 minutes	10 minutes

† Four 25-m throws used for buried mines, 16 20-m throws used for surface mines

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In recent years, opportunities for exploiting "smart" minefields in which weapons connected by a computer network can autonomously change position to "heal" a breach have been examined. Concepts deemed to have merit would require further consideration by military experts or through war-gaming, modelling and simulation to determine if they are operationally effective.

If there is an alternative or group of alternatives to AP mines, they should be cheap and effective in requisite AP mine roles, including reinforcing obstacles, increasing effects of other weapons, and incapacitating or distracting both non-belligerent and military forces. They should not only be capable of satisfying the Mine Ban Treaty imperatives, but also the essential and critical characteristics of anti-personnel weapon systems: early warning, line of sight (LOS) and non-LOS capability, and lethality to maximize operational effectiveness while minimizing logistic and transport burdens. They must be durable and able to operate in all weather conditions under all fighting conditions. In directly affecting personnel, they must provide the equivalent physical and psychological deterrent as AP mines, but at the same time leave no permanent damage to a country or intentionally disable non-combatants. Alternatives to AP mines must be simple and secure on command, control and communications systems, be easy to install and use (with no need for extra troops or training), and maintain a degree of interoperability with our Allies.

While a great deal of effort has been devoted to the search for alternatives, most of the attempts to find a one-for-one substitute for AP mines have proven elusive and result in a loss of capability or are costly to implement. Indeed, considering the specialized functions of AP mines, there may be no weapon system or template that exists to compensate for their unique effects. Although the problem is as much technological, it may even be as simple as involving several complementary conventional solutions in firepower and observation (e.g., pre-registered fire, remote controlled mortar, and Claymore) to fulfill traditional AP mine roles and missions.

POSSIBLE SOLUTIONS

It is recommended that doctrine within the current framework of surveillance, obstacles and weapons be amended. There is a need to develop improved surveillance sensors that can detect and alert our troops about enemy movement, direction and hostile intent. Jam-resistant RF or IR links between the sensors and the man-in-the-loop will be required to decrease the latency in sensor-to-trigger decision cycles. Synchronization of ISTAR (intelligence, surveillance, target acquisition and reconnaissance) assets, decentralized allocation of sensors and early warning systems to tactical units, and dissemination of intelligence to commanders at all levels will be required to develop a robust common operating picture.

A concept of layered defence should be considered to update obstacle doctrine. A first layer with increased use of obstacles, patrols and possibly guard dogs could provide warning to turn away innocent civilians. A second layer consisting of non-lethal responses that can cause nausea or disorientation could enhance deterrence against determined criminal factions, and a final layer with lethal responses could prevent infiltration by combatants and belligerents. Methods to quickly erect fences, dig ditches, and lay improved wire entanglements should be investigated.

There is also a need to increase the lethality at the small unit level. Use of command detonated mines and Claymore-type munitions, physical barriers (including non-lethal), Automatic Grenade Launchers, and more immediate access to indirect fires can provide the required lethal response to compensate for the loss of AP mines.

CONCLUSION

From the time of the first use of mines, technology has advanced the capability of the AP mine. Simple, crude devices that were often unpredictable have become, in some cases, very elaborate pieces of equipment that can detect and attack a target, or self-destruct after a pre-set time. Recent history has shown that the problem that led to the Ottawa Convention is based on the indiscriminate use of existing AP mines.[28] Given the fact that, in the tested scenarios, a definite benefit of using AP mines exists, further research should be undertaken to develop a viable, treaty-compliant alternative.

Desirable traits include invulnerability to suppression (either fire from under cover or from a remote location), rapid deployment (such as remotely fired, indirect munitions), redundant firing links (such as a remote firing system that employs multiple, redundant and robust firing lines), and programmable firing capabilities (from one bomb at a time to many bombs at once). Technologies exist today to meet the above characteristics including secure, radio-controlled, portable remote initiators; remotely controlled mortars, Claymores, rifles or machine guns; and lightweight Automatic Grenade Launchers with different types of rounds.

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Mr. Roy joined the Department of National Defence in 1976 after graduating from Queen's University. Initially he worked on logistics analysis, including a deployment to CFB Petawawa. During several postings, Mr. Roy completed numerous studies on maritime operations and tactics, ICBM and SLBM warning system capabilities, analysis and advice on the acquisition of EW systems, Land Forces casualty estimates, war gaming, various Air Force plans and operations, and S&T Strategic Planning and assessment of emerging technologies. Mr. Roy moved to Kingston in May 1998 as OR Advisor to the Commander and has been working on analyses of Alternatives to AP mines, Command and Control systems, and future capabilities and concepts.

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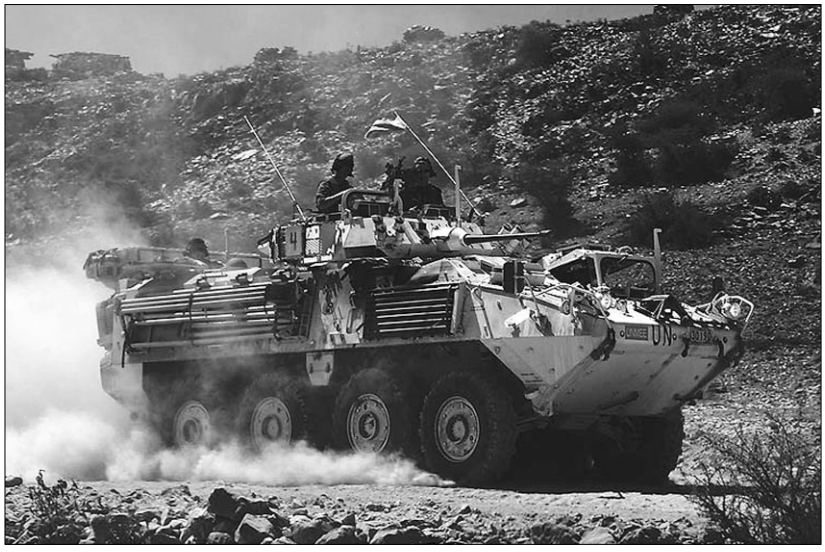

A LAV III on patrol in Senafe, Eritrea. The CF is serving on the United Nations Mission in Ethiopia and Eritrea (UNMEE), monitoring the Temporary Security Zone between the two countries.

Roger L. Roy

British Mechanized Doctrine during the Inter-War Period

by Major C.A. Jamieson, CD

INTRODUCTION

Historically speaking, the inter-war period is an interesting period in the development of technology on the battlefield. The technological innovations that occurred during the first three decades of this century, paved the way for a new style of warfare. This new style of warfare, brought on by mechanization, would be one of highly mobile forces doing battle against each other in a fast-paced and far-reaching battlefield. Military historians John Keegan and Richard Holmes note that, on the eve of the Second World War, the combatants were about to take part in a war that employed:

> tanks, tactical aircraft, self-propelled artillery [and] motorized infantry. [T]hese elements of machine-age warfare were to invest its operations with the rapidity and reach not seen since the irruptions of Genghis Khan in the thirteenth century.[1]

For the most part, the British Army took the advent of mechanization seriously, especially during the period just following the end of World War One and the period just before the outbreak of World War Two. Even during the worldwide depression of the 1930s, the British Army continued to develop its mechanized doctrine. In short, this essay will examine Britain's mechani-zation doctrine during the inter-war period; and in doing so, it will compare their doctrinal developments to those of their Allies and Germany during this period. In essence British mechanization doctrine developed in three stages. Stage One—1918 to 1928—when Great Britain took the initial steps in the process to mechanizing its forces from its lessons learned out of the Great War. Stage Two—1928 to 1934—when, primarily because of the worldwide depression and war complacency, Great Britain's efforts to modernize its Army were seriously hampered. Stage Three—1934 to 1939—when, because of impending war clouds, Great Britain was forced into a rapid process of mechanizing its forces.[2]

STAGE ONE

At the end of the Great War, many believed that the world had fought its last major conflict. The death toll and the sheer terror of some of the weapons that were used made most people feel that another war like it was surely unthinkable. However, the real distaste for the Great War was in its relentless trench warfare and its painstaking longevity. Although both the Allies and the Germans experimented with various forms of more mobile styles of warfare in the closing months of the Great War, neither side really carried on with these innovations in the years immediately following the war. The German offensives of March to May 1918 were both initially promising, but due to limited national resources, long lines of communications and the entering of 1.5 million Americans into combat action, Operations "Michael" and "George" soon grounded to a halt. Although the Germans did not have tanks in these offensives, they did demonstrate that a force composed of lightly equipped and highly mobile infantry forces mixed with close support artillery and low-flying aircraft was a highly effective one.[3] On the other hand, the French, the British and even the Canadians also showed that they were interested in breaking the deadlock, and their solution was to add tanks to a force that also had motorized infantry, close support artillery and ground attack aircraft working in close cooperation. In both Soissons and Cambrai, the Allies were mildly successful as they tested out the tank in offensive operations. At these two battles they correctly massed their tanks for the value of shock action, but they failed to coordinate the use of intimate infantry support. Many of the tanks arrived on objectives without infantry and they were at the mercy of the enemy infantry. However, it was at Amiens in August 1918 where the Allies routed the Germans by massing tanks, infantry, artillery and aircraft into an offensive concentrated onto their weak areas. The British freely admit that this tactic was mimicked from the successes of the German offensive, Operation "Michael", only a few months before.[4] With the advent of the successful coordinated use of the tank, motorized infantry and the aircraft, the age of mechanization had entered the battlefield.

At the close of the war, the process of improving the mechanization of armies was almost a dead issue. Most of Europe was in ruins and most national treasuries had been exhausted, if not in serious debt. Casualty lists were staggering and poverty lines were growing. In an effort to cut costs and use money elsewhere, most governments were looking at ways to stand down as much of its military as possible; Great Britain was no different. However, while most people in Great Britain concentrated on how to recover from the aftermath of the Great War, two British theorists, J.F.C. Fuller and Basil Liddell Hart, concentrated on how to fight the next war. Soon after the end of the Great War, both theorists had formed the opinion that the mechanization of the Army was the only way for a military to have success in future European wars. Their view on mechanization translated into the mobility of an army—the more an army was mechanized, the more it was capable of mobility and success.[5] Both Fuller and Liddell Hart agreed on a number of key theoretical points concerning mechanized doctrine and the mobility of an army. First, they agreed that a mobile defence was the best form of defence. Secondly, they agreed that the enemy should be dislocated but not necessarily be

destroyed. Finally, they agreed that the pursuit was very important to the "annihilation of the enemy."[6] Where they differed was at the strategic level. Liddell Hart believed that with the speed and mobility of a mechanized army, it could thrust deep into an enemy's lines and "psychologically dislocate the enemy's command." Fuller believed that the employment of mechanized forces would guar-antee victory at the operational, not strategic, level. Fuller theorized that his operational level of warfare would give way to decisive, set-piece battles.[7]

It is primarily due to the pressure that these two fine theorists made on the Army and government of Great Britain, that Britain began experi-menting with mechanized tactics. Great Britain's Experimental Mechanized Force Trials of the 1920s were highly successful and each year they inched the British Army closer and closer to the ideas that theorists like Fuller and Liddell Hart had dreamed. Although the organization was not using any newer, more revolutionary equipment than it possessed at the end of the Great War, it was developing doctrine. It was learning to conduct operations in an all-arms effort. It was learning to conduct highly mobile operations. But, most of all this force was learning to manoeuvre in a strategic and not just a tactical manner.[8] By 1928 the British Army was slowly, but positively, building a mechanized Army and it had the tactical doctrine to back it up.

Compared to other major powers, Great Britain's small steps were leaps-and-bounds in front of the rest of them. During this stage only the Americans appeared to be joining in on the process of mechanizing its Army. Similar to the British, they were conducting trials. However, the big difference between the two was that the American doctrine was focused on the defence of North America, and not Europe. Hence, they designed their mechanized forces around lightly armoured "mechanized cavalry" who could take over the role of the horse. American mechanized units, almost entirely composed of cavalry troops, were designed principally to perform reconnaissance functions, not coordinated all-arms attacks on the enemy.[9] During this period, the French and Russians concentrated on rebuilding their respective armies. The former, having taken the wrong lessons from the Great War, chose to concentrate on the development of the artillery; whereas, the latter was simply not well organized. The fallout of the revolution and the continual purges downgraded their capabilities. As for Germany, she was still trying just to survive at this point.[10]

STAGE TWO

At the end of 1928 the finances of most nations were at a breaking point. By the time the worldwide effects of the "Wall Street Crash" were being felt by developed nations, the world had begun to enter the era of the Great Depression. As the depression hit, most nations began making massive cuts to their defence budgets. The relative peace of the last ten years had deluded nations into believing that they would never again have to fight a war on the scale of the Great War.[11]

The feelings were not much different in Great Britain. As a result of defence cuts, Great Britain had retarded its tank growth and the overall development of its mechanized Army. To this point essentially, Great Britain had envisaged (and envisaged only) the developing of three basic tanks. The first was a fast and lightly armoured light tank for reconnaissance and screening tasks. The second was a fairly fast and more heavily armoured medium tank for long-range strategic tasks such as penetration and tank-to-tank combat. The third tank was to be a slow, very heavy infantry tank for close support of the infantry. The key to this new mechanized Army was their Army's selection of the medium tank. Although the British government had developed a superior medium tank at the Vickers factory and its replacement the Sixteen Tonner, neither was ever good enough. As improvements were made to them, they soon became too costly to produce. In 1932, the projects to build either a Vickers or Sixteen Tonner were abandoned. Hence, the most important part of a new mechanized Army in Great Britain—that of the medium tank—was to be shelved for a cheaper, inferior model.[12] With their abandonment, the British would prove unable to develop a "good all-purpose medium tank."[13]

The defence cuts of this period also affected the development of other tracked vehicles. The cuts also meant that very few mechanized carriers or tracked artillery pieces were being developed or constructed.[14] The one bright spot during this period was that the British continued to experiment with brigade-size mechanized formations. The effect of the defence cuts on these exercises had made it very difficult for the British Army to develop mechanized doctrine above the tactical level. Still, their tactical doctrine was being defined. The exercises had led them to a few solid conclusions about tactical mechanized doctrine. Firstly, they concluded that any operation beyond a tactical level required detailed logistical considerations. Secondly, they concluded that tanks were best used independently to strike at the enemy in wide manoeuvres. Thirdly, they concluded that tanks fight better when they are massed. It was with these conclusions in mind that Great Britain then decided to form an independent armoured brigade to augment its mechanized brigade.[15]

Compared to the other major powers during this period, Great Britain had probably done more than any of them to define low-level mechanized doctrine. However, it was in the technological arena that they began to slip well behind two other nations. The abandonment of the medium tank and the slow down in tracked vehicle development had put the British at a disadvantage to Germany and Russia. "Forbidden, under the Treaty of Versailles, from possessing military aircraft and most types of armoured vehicle(s)", the Germans were "experimenting with mechanization, the rapid movement of troops" and tank-infantry-aircraft cooperation.[16] During this period, they made formal agreements to share information with Russia. The Germans benefited from the Russians' ideas on chassis designs and the Russians benefited from the Germans' gun technology. Russian chassis designs could be seen in the Panzer III and IV tanks and the PzkwIII troop carrier, while German gun technology was evident in the T34.[17] The Germans and the Russians were fast developing superior tanks and

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mechanized vehicles to those of Great Britain. France was simply disinterested in building a mechanized Army. In the United States, they were going through many of the same deliberations Great Britain had already been through, except that they had now turned their attention almost entirely toward the acceptance of the light tank to perform the nation's primary task—that of the defenceof North America. The American doctrine called for fast, lightly armoured tanks to "execute high-speed cavalry missions." Although the Americans did not opt for medium tanks, they did recognize three very important points about mechanized warfare. One, that there was a need for mechanized infantry to afford protection to the tanks against anti-tank fire. Two, that supporting artillery formations need to be as mobile as the force they are supporting. Three, that supply and support troops had to become more mobile.[18] However, the Americans, like the British, did not have the large numbers of mechanized forces that Germany and Russia were amassing during this period.

STAGE THREE

As the year 1934 started to unfold, Britain began to realize that Germany and Russia were rearming themselves at a rapid rate. In the case of Germany, contrary to the Treaty of Versailles, they were quickly establishing an Army with a strong mechanized organization. It was not long before the British realized that they had to step-up the rearmament process and that they had to concentrate on building a mechanized Army. To build this mechanized Army the British had, to this point, only envisaged two types of tanks—light and medium; and the designing of an acceptable medium tank was still marred by technical problems. The Army, through its tank designers, had built two medium tanks—the A9 and the A10—but both of these tanks proved to have mechanical problems. Neither tank could satisfactorily operate with the required 30mm of protective armour (30mm was required at that time to defeat the effect of German anti-tank weapons). With no other option available, the slow A9, with its heavy armour, became the medium tank for the British Army. The British Army was forced, for the short-term, to use the A9 as a multi-purpose medium tank in both medium and infantry (heavy) tasks. However, the technical problems that hounded medium tank development forced the British to pursue two separate tanks for these tasks—the infantry or heavy tank for the infantry task and the cruiser tank for the medium task. The improved A9 later would take on the role as just a cruiser tank, as the British soon pressed two new tanks—the A11and the A12—into development as infantry tanks. These tankswere heavily armoured and extremely slow, but in a defensive role, they proved to be the "most effective fighting vehicle … in the first yearsof the war."[19]

Realizing that they were possibly on the brink of war, the British completed their defining of tactical doctrine and started experimenting with formations larger than a mechanized or armoured brigade. Although the British realized the importance of forming mechanized and armoured brigades and divisions, they were quite concerned with the role that cavalry units would play in the new mechanized British Army. The horse simply had no role in a mechanized army. The easy solution would have been simply to get rid of the cavalry in favour of forming mechanized infantry units from existing infantry units, and armoured units from the existing Royal Tank Corps. However, as the cavalry was an established part of the Army and British society, their dissolution would cause major problems to the Army preparing to go to war. Thus, "the cavalry with all its social influence could not be destroyed." Rather it was assigned roles similar to the Royal Tank Corps and provided the British Army with a much-needed nucleus of tank units. Based on the exercises and trials that the British Army had been conducting, it began organizing itself into Mobile (Mechanized Infantry) Brigades using the infantry brigade formations and into Armoured Brigades based on the Royal Tank Corps and established cavalry brigades. By the outbreak of war, Great Britain was not ready numerically or technically to take on the more mechanized German Army, but it had understood that it needed to start organizing itself into mechanized and armoured divisions to counter the threat.[20]

During this period, the United States had experimented with armoured-heavy organizations, but they had decided to stay with their previous choice and continue with their use of lightly armoured cavalry forces to sustain their primary role of the defence of North America. Whereas the British placed tank units inside their mechanized formations and placed infantry units inside their armoured formations, the Americans con-tinued to tactically organize their mechanized infantry and armoured cavalry into separate units that rarely exercised together. This major fault in American doctrine would later be paid with American lives at the battle of Kasserine Pass which saw Americans not only fail to mass their tanks, but also allow their infantry and tanks to be separated. Poor tank-infantry cooperation training was the culprit.[21] Indeed, the most important lesson that the British had learned was to conduct the Second World War without the horse. This somewhat minor detail would be a saving point in the later portions of the war. At the start of the war, all major powers, including Germany, were still using horses for mobility. The inclusion of the horse into the organization of modern armies would assist in their downfall. The Americans soon came to share this British view on the exclusion of horses. The Germans, the Russians and the French saw the horse as a supplement, and not a detriment, to mobile operations. Horses were generally used as a replacement to mechanization for those units that could not become or remain mechanized. As the war progressed the Russians and French (after 1944) saw the horse as more of a hindrance to mechanized operations, whereas, the Germans saw the horse as a means of delivering a limited degree of mobility to units that were no longer capable of being mechanized. Indeed, in the early stages of World War Two, the Germans attacked Poland with large numbers of horses in logistical support units. The less grandiose Spanish Civil War had helped to confirm a great number of lessons for the Germans; however, the

one exception was that it wrongly confirmed to the Germans that they could continue to use horses in some roles in their mechanized Army. As the British had already seen on exercises on Salisbury Plain, the horse was not as dependable as the truck or the mechanized support vehicle.[22]

CONCLUSION

The British Army has been criticized for not being pre-pared to enter the Second World War as a modern mechanized Army that did not employ modern mechanized doctrine. This is not totally true. Indeed, the British Army, like the French and the American armies, could not compete with the vast resources or political impetus that was driving the effort of mechanization of the German and Russian armies during the latter stages of the inter-war years. Hence, the British, Americanand French without their allies, were numerically inferior to either Germany or Russia. Additionally, defence cuts led to the retardation of the tank and mechanized vehicle programmes. The defence cuts had a direct result on the technological shortfall of the mechanized doctrine in the British Army.[23] However, the British Army led the way in developing mechanized doctrine In many ways it has been demonstrated that the German's so-called "blitzkrieg" tactics were merely adopted from the British successes at Cambrai and Amiens, and from the lessons that the British had learned from their experimental mechanization trials of the 1920s and 1930s.[24]

During the period 1918-1928 the British Army carried on using and expanding the lessons it had learned from the Great War. They had developed superb mechanized doctrine at the tactical level. Early on, they had learned the importance of tank-infantry cooperation and the need to mass tanks for an assault. During the period 1928-1934 the British Army's technological superiority over other nations faded as defence cuts became more and more severe. This effected the development of their mechanized doctrine; they were unable to substantially advance doctrine without the practical application of modern tanks and mechanized vehicles. The hardest hit area was the development of a suitable medium tank—one that had both sufficient anti-tank protection and great speed. The medium tank, as we now know, is the pivot point of any mechanized army. So, for the British to abandon the development of a suitable medium tank was a recipe for disaster. Luckily for the British, their doctrine survived. Although they were behind the Germans numerically, at the beginning of the war they were able to weather out the first few years of war—by which time a suitable medium tank could be mass-produced and put into service. The doctrine of the British Army during the period 1934-1939 was one of creating a proper mechanized Army. First, they improved their doctrine to include the establishment of armoured and mechanized divisions. Second, they designed training to include close cooperation between the infantry, armour, artillery and Air Force. Third, they realized the value of a mobile service support element to accompany armoured and mechanized formations. Finally, they mechanized all combat arm elements of these formations.

Was the British Army ready numerically or technically to start the Second World War? No. Was the British Army ready doctrinally? The answer would have to be a resounding yes.

ABOUT THE AUTHOR...

Major Cliff Jamieson has recently completed a Bachelor of Military Arts and Science degree at the Royal Military College of Canada. His service has included tours with all three battalions of Princess Patricia's Canadian Light Infantry in Canada, Germany and Cyprus. He was one of the first Canadian officers deployed to the former Yugoslavia in 1992, where he was the Aide-de-camp to the Commander Sector West. On returning to Canada in 1993 he was employed as an arms control inspector for one year before returning to regimental duty. He also served as a military observer in the Iraqi desert with UNIKOM, followed by a tour with the Directorate of Army Training. Major Jamieson is currently employed as the Staff Officer to the Chief of Staff, Land Force Western Area in Edmonton, Alberta

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Major C.A. Jamieson, CD

Military Readiness

by Major M.R. Voith

INTRODUCTION

Military readiness is a concept that is often used by military officers, planners, bureaucrats and politicians. Unfortunately, this concept is probably one of the least understood and studied. There is no common or widely accepted definition, and therefore, within military circles, there is no common agreement on what it is or how it should be measured. This fundamental misunderstanding of the concept in the Canadian army was highlighted in the Report of the Somalia Commission of Inquiry that stated:

> There was no agreement or common understanding on the part of officers as to the meaning of the term 'operational readiness'. Therefore, because the term had no previous meaning in doctrine or policy, the words came to mean whatever officers and commanders wanted them to mean at the time. In other words, any officer could declare a unit to be operationally ready without fear of contradiction, because there were no standards against which to measure the declaration.[1]

The lack of objective standards highlighted in the Commission only served to exacerbate the entire readiness debate. In 1994, the Office of the Auditor General of Canada commented that:

> until 1994, Land Force Command did not have standards to use in assessing units. Collective training provides some information on readiness, but Land Force Command staff did not regard existing field exercises as adequate assessments. Unlike the United States Army, the Canadian Forces does not validate land field exercises and therefore cannot assess whether exercises meet operational requirements.[2]

The intent of this essay is to investigate the concept of military readiness and to attempt to clarify some of the misconceptions. An overview of military readiness is provided, specifying the fundamental issues of the threat and the associated military capability to counter it, and the time element of when the threat will occur. These concepts are linked together to present a framework or taxonomy of readiness. The idea of reporting military readiness and the relationship between budgets and readiness is also discussed.

WHAT IS MILITARY READINESS?

Military readiness means different things to different people. The primary problem, however, with many of the definitions is that they are either too broad (strategic) or too narrow (tactical). Most definitions do not capture the complete spectrum of the concept of military readiness. Readiness of a country's military force depends on many factors such as its size, equipment, personnel, training, and national economic capacity to expand and sustain the force during war. "States differ in the magnitude and composition of resources convertible into additional military capabilities, in the speed and versatility with which conversion can take place, and in the degree in which governments are able to commit resources to this purpose."[3] The economic potential of a country is vital in the development of additional military capability. These resources include "human and natural resources, money, technical prowess, industrial base, governmental structure, sociological characteristics, political capital, the intellectual qualities of military leaders, and morale."[4]

A clear concept of readiness is important since it defines the capability and time dimension that a force must possess to counter the perceived threat. Additionally, within the world of diplomacy, readiness and capability are:

> very important in the relations of states since its operation is less discontinuous and more pervasive than actual warfare or the use of specific military threats. A government, in shaping its policy toward a state perceived to be not only militarily superior but also apt to use its military force, will take these conditions tacitly into consideration even though no specific military threat has been uttered.[5]

A sample of various definitions of readiness illustrating the wide discrepancies in definitions is as follows:

- "Operational readiness is the state of preparedness of a unit to perform the missions for which it is organized or designed. It is closely associated with operational effectiveness—that is the degree to which forces are capable of performing their assigned missions in relation to known enemy capabilities of specific mission requirements."[6]
- "The state of preparedness of a unit to perform the missions for which it is organized or designed."[7]
- "The ability of forces to deploy quickly and perform initially in wartime as they were designed to."[8]

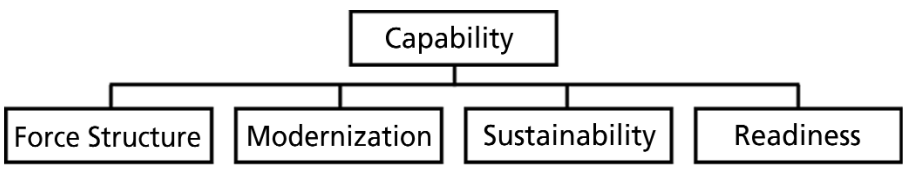

Figure 1: Four Pillars of Capability.

- "The ability of forces to be committed to combat within a short period of time."[9]

- "A function of force structure, materiel, doctrine, manning, and training."[10]

One of the traditional approaches of defining readiness was to explain military capability within the context of four pillars. However, this model fails to separate readiness from that of capability. The four pillars are described as follows (see Figure 1):

1. Force Structure: The number and type of major units currently possessed by the armed forces.

2. Modernization: The rate at which a nation is replacing or adding to its major equipment.

3. Sustainability: The ability of the force structure to conduct military operations long enough and with sufficient intensity to achieve its objectives Sustainability focuses on such areas as the amount of amm-unition and spare parts currently possessed by the armed forces, the ability of the nation to keep its deployed forces adequately supplied, and the mobilization base of the country.

4. Readiness: The ability of the currently configured force structure to perform its assigned missions promptly. Readiness is concerned with such issues as the ability of a tactical air squadron to deliver bombs to a target or to engage in anti-aircraft warfare, or the ability of a destroyer to conduct anti-submarine warfare."[11]

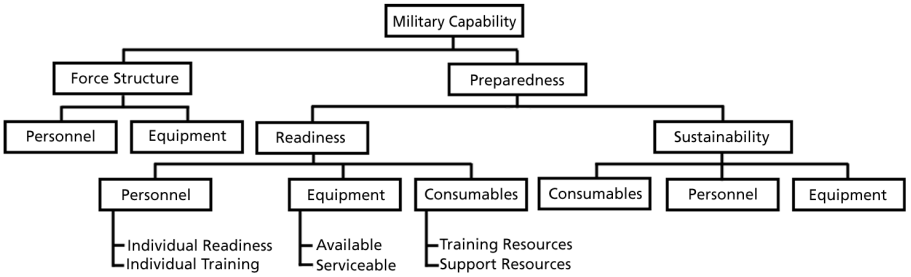

Figure 2: Australian Military Capability Model.

Within the context of this model, to determine the capability required, it is essential to understand the "mission and the threat that these forces are likely to encounter in trying to accomplish their objectives."[12] Once the mission and the threat have been determined, a force structure with the required capability can be constructed. This structure must contain an adequate number of ground, sea and air forces, and must also contain sufficient strategic movement assets to bring the force to the required locations. Modernization of the force is critical for a force structure to remain relevant. Modernization is the replacement of obsolete equipment with more modern and advanced systems. Without modernization, a force experiences "rust out" and becomes ineffective. Similarly, having an adequate force structure with modern equipment would serve no purpose if it cannot be sustained. For example, with the ever-increasing complexity of weapons systems, delays in acquiring spare parts may occur for various reasons such as "shortages in the requisite raw materials, tooling and fabricating, and in personnel training for the given production line."[13] In peacetime this problem is accentuated by the competition of contractor's non-military orders, since the government is just another consumer. Methods to overcome this problem include waiting for the parts or increasing payment for the goods in return for faster delivery, and thus increasing its unit cost. The final pillar is that of readiness—"having the proper mix of people and equipment to perform effectively at the initiation of hostilities."[14]

The Australian Defence Force defines military capability within the two components of force structure and preparedness. "Force structure is described as the personnel and equipment liabilities associated with a capability. Preparedness is the sum of readiness and sustainability and represents the assets required to maintain a capability."[15] Readiness and sustainability are further sub-divided into personnel, equipment and consumables. Figure 2 details a complete overview of the concept.

The component of personnel readiness "encompasses trade and military skills proficiency, medical and dental fitness and legal and compassionate encumbrances."[16] The Australian Army intends to clearly define the individual readiness levels so that they may be measured and monitored. Within the area of sustainability, the Australian Army believes that the calculation of reserve stocks is the most important. The intent is to calculate the resources required to sustain forces on operations in short warning conflicts. This data would subsequently be used to determine war material usage rates.

Allan Millett and Williamson Murray, in the book *Military Effectiveness, Volume 1, The First World War*, define military readiness within a framework of four different levels of effectiveness: political, strategic, operational and tactical (see Figure 3). They suggest that these levels overlap and that in order to determine the effectiveness of a force, an assessment must be made at each level.

A short description of these levels of effectiveness is as follows:

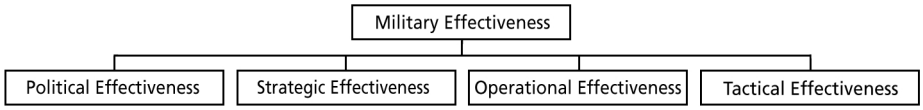

Figure 3: Military Effectiveness Model.

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Political Effectiveness. In order for the military to be successful, full cooperation with the politicians is essential. It is necessary for the military to secure all the necessary resources to maintain, expand and sustain itself in order to be effective across the full spectrum. "Resources consist of reliable access to financial support, a sufficient military-industrial base, a sufficient quantity and quality of manpower, and control over the conversion of those resources into military capabilities."[17]

Strategic Effectiveness. "Refers to the employment of national armed forces to secure by force national goals defined by political leadership. Strategic activity consists of plans specifying time, geography, missions, and objectives and the execution of those plans."[18] The establishment of national goals must be interactive with military leaders such that the force structure is harmonized with the respective goals and not disconnected from them.

Operational Effectiveness. "Refers to the analysis, selection, and development of institutional concepts or doctrines for employing major forces to achieve strategic objectives within a theatre of war."[19] The application of new technologies and weapon systems must be integrated in the institutional concepts and doctrine. Failure to do so results in operational ineffectiveness.

Tactical Effectiveness. "Refers to the specific techniques used by combat units to fight engagements in order to secure operational objectives. Tactical activity involves the movement of forces on the battlefield against the enemy, the provision of destructive fire upon enemy forces or targets, and the arrangement of logistical support directly applicable to engagements."[20]

All the models presented touch on many aspects of military readiness. However, none of them adequately consider either the time component or the threat. When considering military readiness it is important to consider, in detail, the answers to two crucial questions: Ready for what? And ready for when? Without carefully analyzing the threat, it is not possible to determine the requisite force structure, weapon systems, individual and collective training requirements and all the other components that contribute to capability. Likewise, determining when you must be ready by is also extremely important. During the cold war, the North Atlantic Treaty Organization (NATO) had to be immediately available, and hence the requirement for forward deployment. On the other hand, if a threat were not to manifest itself for ten years, then the level of readiness of a force could be downgraded and ramped up as the deadline for readiness approached.

One of the most contemporary thinkers on military readiness is Richard K. Betts. He defines readiness in terms of the three categories of operational readiness, structural readiness and mobilization readiness (see Figure 4) and includes a capability versus time component. According to Betts, readiness "depends on the impact of time on two ratios: one is the relation between the supply of combat power and the demand for it, and the other between actual and potential capability."[21] Therefore, based on the capability versus time component, the following axioms have been developed by Betts:

- Military readiness pertains to the relation between available time and needed capacity.

- A country is militarily ready as long as the time needed to convert potential capability into the actual capability needed is not longer than the time between the decision to convert and the onset of war.

- A country proves not to be ready when a gap between its actual and potential capability causes a gap between the supply of capability and the demand for it.[22]

Operational readiness is all about the status of existing units to engage in immediate combat. It includes such factors as the leadership of the unit, initial supplies on hand that would be used in combat, serviceability of equipment, and individual training of the soldiers and training of the unit as a combined arms team:

> Operational readiness is about efficiency and is measured in terms of how soon an existing unit can reach peak capability for combat. Operational readiness is assessed according to inward-looking standards: the absolute potential inherent in the unit and the difference between its actual capability and that potential. This standard has nothing to do with how many units at that level of efficiency might be needed to beat the threat, or what larger number of units at a lower level of efficiency might still be able to fight successfully. It indicates how proficiently a unit may fight, but not whether it will win.[23]

Structural readiness is concerned about the potential capability of existing units and how soon they could be deployed into combat. "Structural readiness refers to the number of personnel under arms with at least basic training, the number of formations in which they are organized, the quantity and quality of their weapons, and the distribution of combat assets among land, sea and air power."[24] Structural readiness alone does not guarantee success, since operational readiness may not be at the appropriate standard:

> Operational readiness depends on bringing the actual capability of an existing unit up to its potential, by making its available mass as efficient as possible—that is, by ensuring that the unit has all its designated personnel and equipment, that the personnel are fully trained in their specialties, and that the equipment is

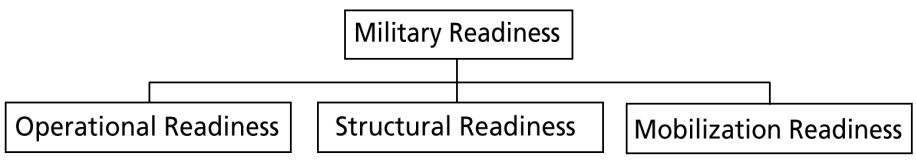

Figure 4: Military Readiness

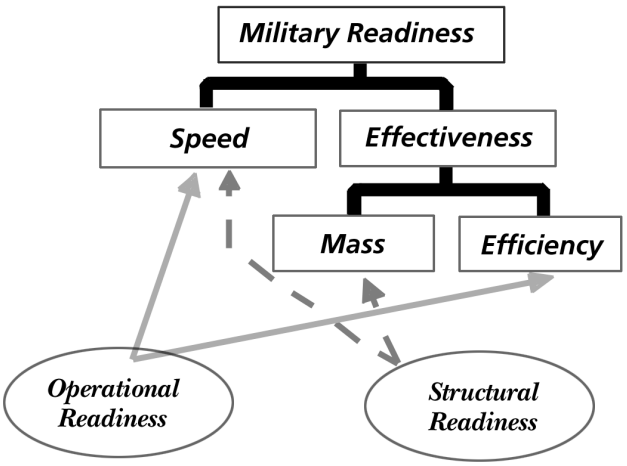

Figure 5: Speed, Mass and Efficiency relationsips.

in working order. Structural readiness depends on bringing the requisite numbers and types of units into existence, converting the military potential inherent in the economy into actual military mass, that is, by recruiting personnel, producing equipment, and distributing them into coherent combat organizations during normal peacetime, before a crisis comes to call on power.[25]

As a general rule, it takes much longer to achieve structural readiness than it does operational readiness. As an example, an army unit deploying on operations might undergo 90 days of training to bring their operational readiness levels to the appropriate standards. However, to increase the size of the army or furnish the army with new equipment would take considerably longer.

Mobilization readiness "consists of the preparation of a small peacetime nucleus of military forces for structural expansion, and of the government administrative apparatus for coordinating the changeover of the civilian economy to war production."[26]

Betts defines the three types of readiness in terms of speed, mass and efficiency. Table 1 provides a summary of his definitions.

The relationship between the three factors of speed, mass and efficiency are shown at Figure 5. Net military readiness is a product of operational readiness and structural readiness. The military readiness trade-off is between operational and structural readiness. To establish the correct par-ameters it is necessary to determine *readiness for what and readiness for when.* Is it essential to have full readiness of the existing force in two days, or is a longer period of time available to achieve full effectiveness? Governments, however, often devote resources to current capabilities at the expense of a higher capability that could be mobilized in a longer time period.

MEASURING MILITARY READINESS

The idea of measuring military readiness is as controversial as the definition itself. "Readiness is difficult to measure. By its very nature readiness can only be known once the real battle starts. Any system used to measure readiness in peacetime can only do so through the use of surrogates or substitutes."[27] Nevertheless, the notion of being able to determine the degree of readiness of a force is important. Assuming that a strategic estimate has been conducted, and the threat and point in time when it will likely occur has been quantified, then a required level of military readiness can be established. This required level must be measured to determine if the force is at the mandated level. This measurement system also provides important information to justify manpower and training levels and the purchase of new weapons systems or other military hardware. However, measuring military readiness requires a clear under-standing of what readiness is and being able to establish readiness levels, determining what factors need to be measured, and clear standards of the items to be measured.

Measuring military readiness is not without pitfalls and four basic problems arise:

- There are few comprehensive models available to measure readiness.
- Good readiness models are hard to develop due to the inter-dependency of many different factors. "This makes it hard to determine the relationship between inputs (resources allocated to readiness) and out-puts (performance in combat)."[28]
- Readiness reporting is not impartial, since often the reporting is done along the chain of

Term	Definition
Net military readiness	Speed x effectiveness
Speed	Time in which unit is deployed into combat
Effectiveness	Mass x combat efficiency
Mass	The basic organized capital stock, human and technical, of a military force. Mass is measured in the number of units. It establishes the limits of an existing forces' combat potential.
Efficiency	The degree to which units can realize their maximum potential performance. It depends on how well manned, equipped, trained and maintained the units are.
Operational readiness	Speed x efficiency. Operational readiness is about efficiency and is measured in terms of how soon existing units can reach peak capability for combat.
Structural readiness	Speed x mass. Structural readiness is about how soon a force the size necessary to deal with the enemy can be available.
Mobilization readiness	Civilian economic and demographic bases x military organizational base x conversion plans

Source: Richard K. Betts, Military Readiness, Concepts, Choices, Consequences, p. 39, 40 and 41.

Table 1: Summary of readiness definitions.

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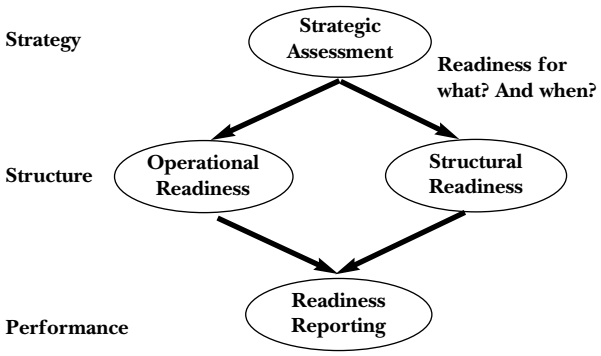


Figure 6: Readiness and Strategy/Structure/ Performance.

command. For reasons of career progression, commanders often do not accurately report the readiness of their units, but inflate or distort the data.

- Readiness models are concerned for the most part with operational readiness and do not consider structural readiness. In order to have a clear picture of military readiness, a measurement system must also be established to quantify the potential capability of the existing force.

In general terms, there are three basic levels that must be considered when establishing a readiness measurement system. The most basic and simplest level is that of individual readiness. Standards are generally easy to establish and measure. For example, has the soldier completed his weapons, first aid and nuclear, biological and chemical defence training? Is he in good physical condition, and has he prepared his family for his potential absence? Most armies have individual battle task standards to measure this level of readiness.

The next level of readiness is that of the tactical/operational level. This is where the skills of the soldiers are merged with equipment and the doctrine to fight. Unit readiness is more difficult to quantify than that of the individual soldier because of the many different factors influencing one another. Battle groups and combat teams must learn to operate effectively and the readiness of these organizations must be combined with larger formations such as brigades, divisions or corps. The level of read-iness of the formation would not simply be the sum of the readiness of the units. Leadership, staff training, command and control and doctrine are important factors which link units together to fight as a team.

Strategic readiness is the third level. Strategic readiness consists of elements such as the ability to sustain and move the force and to provide accurate intelligence.

Before the military readiness of a military force can be measured, it is essential to determine the strategy, structure, and performance relationship (see Figure 6). At the strategic level, the basic questions *readiness for what and when* must be answered. Only when the threat is clearly defined, and the associated timeframe is predicted can the structure in this context the operational and structural readiness parameters, be defined. To provide military readiness against a threat at a certain point in time requires trade-offs between operational and structural readiness. Once operational and structural readiness requirements are established, then and only then can military readiness be measured. If no criteria or framework is built, then readiness reporting has no basis in fact and simply becomes a bureaucratic requirement serving no useful purpose.

A good readiness reporting system must measure the three fundamental tenants of readiness—speed, mass and efficiency.

READINESS AND THE BUDGET

How much to spend on defence is a question that politicians must answer and is limited by the factors of production—namely labour, technology, land and capital, or economic capacity of a country. This concept can be graphically displayed utilizing a production possibility curve (see Figure 7) which shows the trade-off between military and civilian goods.

Solving the readiness problem depends on the speed of bringing existing units into combat and the speed of bringing potential units into combat. Defining *readiness for what* and *readiness for when* provides the optimum mix. For some nations, a gap exists between the required force and the actual and potential capability that can be mustered. This is primarily because the economy of a country does not permit the mobilization of enough resources to meet the threat. To overcome this dilemma, countries can enter into alliances. For other countries, the optimal level of readiness that the economy can sustain without sacrificing the standard of living is exceeded at the expense of the people. This position is represented by the general area (1) at Figure 7 where a high proportion of the gross domestic product is spent on defence. Goods that would normally be consumed by civilians are used to achieve readiness. The trade-off is between the security of citizens and their comfort, or between "guns" and "butter". An example of an economy that devoted a huge portion of the gross domestic product for the military was the former Soviet Union:

> By almost any calculation Soviet defence put a heavy load on the economy and represents a long and recurring list of important opportunities forgone elsewhere. The defence sector deprives the civil economy of substantial research and development resources, while the ever expanding armaments industry absorbs large amounts

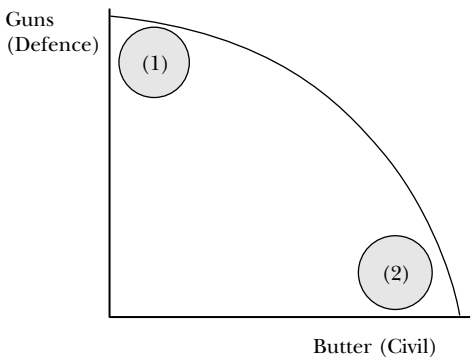


Figure 7: Military and Civilian Goods Trade-Off.

	State A (Military State)	State B (Civilian State)
Start GDP	$1 trillion	1$ trillion
Contribution of each state for the first 40 years	$200 billion (20% GDP)	$50 billion (5% GDP)
Contribution of each state for the last 10 years	$200 billion (20% GDP)	$200 billion (20% GDP)
Total spent on Defence	$10 trillion	$4 trillion
Extra money invested in the economy	Nil	$6 trillion

Source: Richard K. Betts, *Military Readiness, Concepts, Choices and Consequences*, p. 51. Modified by author.

Table 2: Defence Budget and Readiness.

> of investment goods which need to be applied in other branches of industry.[29]

Exceeding the optimal level of defence spending to achieve a specific level of readiness is not without penalties. By staying at a high level of readiness, money used to pay for military capability would be drawn away from civilian industry and would over time erode the economic capacity of the country. This erosion of the economy has an effect on military readiness. Money is not available or will be scarce for the purchase of new equipment. Therefore, money that is available is spent on operational readiness at the expense of structural readiness. Although not immediately apparent, exceeding the capability that an economy can comfortably support ultimately leads to a situation of purchasing readiness today at the expense of readiness tomorrow.

At the other end of the spectrum is that of relative position (2), where very little money is spent on military capability and readiness. In this case, money is invested in the economy instead of the military. The economy benefits by increasing its economic capacity, while the military has little capability and is unready. Nevertheless, the war potential of that nation is greater than if it had invested in defence. "As far as the defence budget as a whole is concerned, unreadiness for decades could provide trillions of dollars for the civilian economy and the base for a much larger military at a later date."[30] In this case, the economic potential of the country is greater and therefore so is the military potential. However, with little spending, mass and efficiency would be low and therefore so would both operational and structural readiness. As government expenditures increase, investment and personal consumption must decrease. Or, as government expenditures decrease, personal consumption and investment increase, thereby increasing the economic capacity of the country.

The following example serves to illustrate the two types of defence spending. Consider two States, A and B. Both invest in defence, State A at a high level for 50 years, while State B invests a modest amount for 40 years and matches State A's investment for 10 years. Table 2 provides an overview of the outcome.

In this example, State B estimated that the threat would not manifest itself for the first 40 years and only maintained a modest investment in the military, but invested $6 trillion in the economy and thus increased its economic capacity and therefore the war potential of the nation. State B would have increased its economic capacity since $6 trillion would have been utilized for investment and personal consumption. This money would contribute to labour, technology, land and capital.

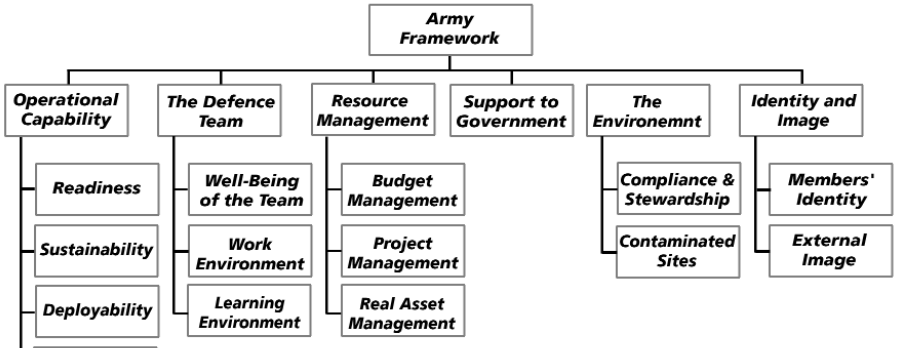
However, if the threat of war had materialized earlier, then State B would have paid for its unreadiness. However, if the conflict had occurred at year 50, State B would be in a better position. Ten years would have been available to create the appropriate operational and structural readiness and would have increased the economy by $6 trillion.

Because budgets are generally limited, operational and structural readiness are traded off such that readiness today is emphasized over readiness tomorrow. If money is not spent to keep units poised for quick commitment, it can be spent to buy more units. Readiness is consumed each day, while procurement is a cumulative investment.

> To illustrate crudely, a hypothetical aircraft's production cost is $10 million; it can be manned and maintained at very low readiness of $1 million or at very high readiness for $2 million per year, and its life cycle is ten years. If the total funds available for the programme are $10 billion, the choice is between a low readiness of 500 planes, or a high readiness force of 333.[31]

In this case, a large force of lower readiness can be purchased; however, it relies on early warning of a crisis and requires longer preparation time.

Two reasons can explain the operational versus structural readiness dilemma. Firstly, military commanders are risk adverse, and therefore want to have



Source: The Land Force Strategic Drection and Guidance

Figure 8: Army Performance.

capability and readiness today. Secondly, a country seldom knows exactly when a crisis will occur and how much time they have available to convert.

READINESS AND THE CANADIAN ARMY

As indicated in several Auditor General's reports, the Canadian army's track record in measuring military readiness has been less than successful. In recent memory, the army had fostered a culture of avoiding assessments and tests to verify the readiness of units. In addition, the Land Force has not kept pace with simulation developments to enhance field training. The net result is that exercises lack a certain degree of realism and the ability to accurately measure readiness is very difficult.

Over the past several years, the Land Staff has devoted considerable effort to develop a system for measuring readiness. A performance measurement system is being developed with a purpose "to provide commanders and decision-makers at all levels with a balanced, results-oriented, user-driven means for monitoring performance."[32] The performance measurement framework (see Figure 8) examines six key measurement areas. Although the model is very comprehensive it does not explain any of the theoretical background nor does it apply any of the concepts of structural and operational readiness, presented earlier in the paper. In general terms the army performance measurement system is essentially an operational readiness tool since it looks at forces in being and attempts to provide an assessment. There is no conscience attempt in the model to examine structural readiness.

The army's preoccupation with operational readiness is evident when trends in spending are examined. Figure 9[33] depicts the Canadian defence budget distribution and the relative percentages of personnel, capital and operations and maintenance. Although this analysis examines the Canadian Forces in total, it is representative of trends in the army. Figure 10[34] is an analysis over the time period 1989-1999, specific to the army.

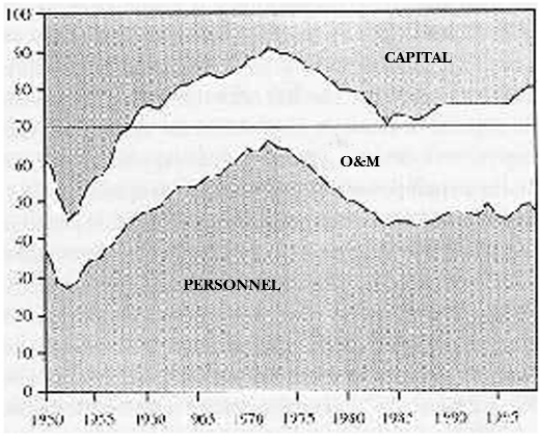


Figure 9: Canadian Defence Budget Distribution 1950-1999.

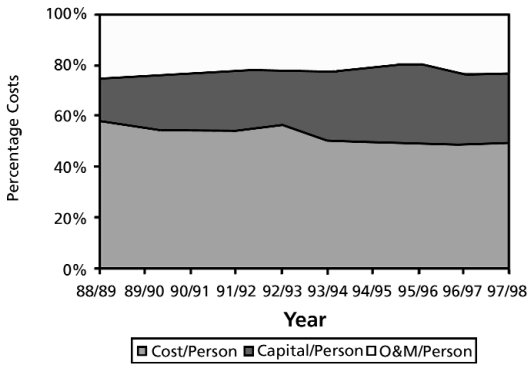


Figure 10: Army Spending in the 1900s.

Both analyses illustrate the increasing operations and maintenance and personnel costs at the expense of capital. This equates directly into readiness today at the expense of readiness tomorrow.

CONCLUSION

Military readiness is a complex subject that has received little attention within the sphere of military studies. Readiness generally means different things to different people, yet a clear understanding of the concept is important since a clear definition and understanding yields a suitable force. Economically, maintaining a force at too high a level when it is unnecessary bleeds the treasury, while maintaining a force a too low a level when there is a significant threat could result in the defeat of a nation. Establishing the right level of readiness requires constant analysis of what the threats are and when they are likely to occur. Answering these questions yields the requirement for readiness. Nevertheless, these requirements do not remain fixed since the world is a very dynamic environment. Imperative to the readiness issue is the ability to quantify that forces are at the correct readiness levels. This requires a prudently designed measurement system that measures current and potential capabilities.

Within the sphere of shrinking budgets, and the generally increasing defence costs, the Canadian Forces and in particular the Land Force must come to terms with the concepts of readiness. What is the Land Force ready for, and when? During the Cold War these questions were simple. However, today the answers are not so straightforward. In order to maximize the use of the defence budget these questions must be answered to ensure that money is wisely spent to obtain the correct capabilities.

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Major M.R. Voith

Coyotes Stalk Multi-National Division (Southwest)

Maximizing the Potential of the Coyote Reconnaissance Squadron on Bosnia

by Major R.T. Steward

Within the NATO Stabilization Force (SFOR) in Bosnia and Herzegovina, only the Kiowa Warrior rivals the Coyote in surveillance capabilities. The Coyote is well suited to the myriad of armoured reconnaissance and security tasks recurrent on Operation "Palladium", such as route reconnaissance, patrolling and convoy escort. However, the question remains whether we are currently maximizing the potential of the Coyote squadron in Bosnia. The role of the Coyote squadron in normal framework operations must be assessed within the context of the current environment. There is no doubt that, from the Multi-National Division (Southwest) perspective, there is a role for the Coyote recce squadron in divisional enhanced capability operations. Is it mission creep[1] *to propose that the Coyote recce squadron can support both National Division (Southwest) and the Canadian Battle Group? The opportunity exists not only to maximize the employment of the recce squadron, but also to showpiece a unique Canadian capability within a multi-national setting.*

The light armoured vehicle reconnaissance, known as the Coyote, is a sophisticated and versatile surveillance platform. The Coyote is well suited to the myriad of armoured reconnaissance and security tasks recurrent on Operation "Palladium", such as route reconnaissance, patrolling and convoy escort. However, the question remains whether we are currently maximizing the potential of the Canadian battle group (BG) reconnaissance (or "recce") squadron[2] in Bosnia. Seen from the tactical perspective, this question involves rationalizing potential tasks for the BG recce squadron in terms of the capabilities of the Coyote. At another level, however, the performance of the recce squadrons[3] in Kosovo was not only reflective of what could be achieved with the Coyote, but was also a "flag waving" coup. The Coyote represents a reconnaissance capability that places Canada in the unfamiliar position of having other armies admire us for our equipment. While not an end in itself, capitalizing on the unique capabilities of the Coyote within a multi-national setting should not be underestimated. One gets the sense that our recce squadrons in Kosovo achieved much more than just tasks and objectives for Multi-National Brigade (Centre). 'A' Squadron,[4] Lord Strathcona's Horse (Royal Canadians) (LdSH[RC])), was the BG recce squadron in Bosnia from late-February to mid-September 2000. In examining the employment of Coyotes in Bosnia, it is not the intention to bore the reader with a travelogue of 'A' Squadron's exploits in Bosnia. Neither, for that matter, will discussion enter into the background of the Canadian BG's role within Multi-National Division (Southwest) (MND [SW]), as these details should generally be familiar to most readers.

While Canadians have been part of NATO's mission in Bosnia from the outset, the Coyote is a relatively new piece of equipment. 'A' Squadron, as part of the 3rd Battalion, Princess Patricia's Canadian Light Infantry BG (3 PPCLI BG), is the second such squadron to employ the Coyote in theatre. This fact alone validates the process of assessing and reassessing the Coyote's role in Bosnia. Further, question four of mission analysis[5] is relevant given recent changes in MND [SW]) and the Canadian area of responsibility (AOR). MND [SW]) has been reduced from six to four BGs, and the Canadian AOR has expanded to include the former Belgium-Luxembourg sector. The result is a MND [SW]) force posture necessarily based upon agility, co-operation and inter-operability. Accordingly, the concept of operations, developed by the general officer commanding, is based upon three overlapping tiers—framework capability, enhanced capability and additional capability. Normal framework operations (NFO) represent the status quo and are reinforced through surge operations as required or desired. Surge operations involve troops moving across BG (and divisional) boundaries for limited periods. These operations focus in time, space and volume as required to demonstrate MND (SW)'s agility. In a deteriorating situation, enhanced capability is generated by utilizing the full range of combat power at all levels. Enhanced capability may also include forming an all arms force from within MND (SW), which, for the time required, would be taken off NFO. Additional capability builds upon enhanced capability and involves assets from outside the division or SFOR.[6]

FRAMEWORK CAPABILITY

The role of the BG recce squadron in NFO must be assessed within the context of the current environment. MND (SW) is increasingly able to focus less on threats to a safe and secure environment (while this remains the main effort) and on ensuring compliance with military aspects of the General Framework Agreement for Peace (GFAP). It is able to focus more on supporting "civil development objectives of the GFAP."[7] As such,

information requirements (IRs) at the BG and divisional levels focus on less tangible targets, such as attitudinal and social conditions prevalent throughout the AOR, rather than the traditional named/target areas of interest (NAIs and TAIs) of a warfighting ISTAR (Intelligence, Surveillance, Target Acquisition and Reconnaissance) doctrine. Determining which communities are receptive to displaced persons and returnees resettlement or should receive overseas aid money and which local politicians are impediments to political stability are elements of information more critical to the commander's decision-action cycle than the size and location of the red arrow.

As such, the means of routinely directing the surveillance capabilities of the Coyote become less obvious. Human Intelligence is the pre-eminent source in the ISTAR process during NFO, making every BG soldier who conducts patrols a reconnaissance asset. As such, much of 'A' Squadron's time has been spent conducting framework patrols throughout the BG AOR. Superimposed upon the entire BG AOR, 'A' Squadron developed an AOR-wide level of situational awareness. Our patrolling scheme complemented those of the in-place companies and batteries. The skill, training and experience of the squadron's soldiers meant that patrol reports were invariably relevant and contributed greatly to overall BG situational awareness. Framework patrolling, however, did not maximize the capabilities of the Coyote. Apart from the deterrent potential inherent in the Coyote's relatively aggressive appearance, framework patrolling might just as well have been accomplished with jeeps. That is not to say that the surveillance capability of the Coyote was not widely exploited by 'A' Squadron and the 3 PPCLI BG. Events regularly occurred which necessitated the deployment of both mast and remote Coyote variants. The potential for mass demonstrations and rallies leading to the April Opstina elections led to a recurring troop task of providing surveillance overwatch of Drvar. The stand-off nature of the Coyote provided a necessarily unobtrusive means of monitoring a potentially volatile situation. The entire squadron was subsequently deployed throughout the AOR in a similar role during the conduct of the elections. 'A' patrol, recently reduced from a troop, is currently tasked in supporting 'A' Battery's[8] efforts to contain outbreaks of violence in Glamoc. The patrol deploys its mast throughout the night, in the middle of town. Its presence has undoubtedly been a dissuasive factor, preventing further violence. Throughout these deployments and numerous others of a similar nature, the Coyote has surprisingly proved to be invaluable. It has provided a stand-off ability to monitor and record situations and events during both daylight and low light conditions. Similarly, the mere deployment of the Coyote's surveillance suites has proven to be a forceful dissuasive factor.

The Coyote has thus been most effective. The most use of the surveillance suites has occurred while deployed in response to actual or potential threats to the safe and secure environment, not during routine intelligence gathering as part of the ISTAR process. While this is the right job for the right tool in Bosnia, work has been intermittent and unpredictable. If this unique skill was made available to a broader audience, useful employment might be increased. In other words, the capabilities of the BG recce squadron can be maximized by making it available to MND (SW) for tasks across the entire divisional AOR. At this level, the number of so-called threats to the safe and secure environment are such that the BG recce squadron would find gainful employment while exploiting the full potential of the Coyote. A secondary, but important, benefit of operating across the division involves the positive aspect of Canadian soldiers contributing in a meaningful manner, with a capability not present elsewhere, within a multi-national setting. Regular exchange with other armies breaks down barriers, improves inter-operability, fosters a co-operative environment, and is professionally rewarding. Although such benefits are priceless, expanding the BG recce squadron's role to the divisional level is only possible if actual costs are either minimal or non-existent. Also, the Canadian BG commanding officer will require some assurance that he has priority tasking for Coyotes, lest he be forced to reconstitute his own Coyote recce platoon. Similarly, the commanding officer is not likely to accept appreciable loss in framework capability. This can all be achieved! In fact, it must be achieved, lest we be guilty of an unwillingness to derive the most from our assets and to contribute in the most meaningful way within MND (SW).

Being superimposed upon the BG AOR meant that the BG recce squadron was not tied to the ground for the purposes of NFO. This gave the commanding officer flexibility in using the squadron to handle fastballs and other tasks that would otherwise affect his mission. 'A' Squadron conducted a security task of SFOR headquarters in Sarajevo for two weeks and similarly assumed responsibility for C Battery's[9] AOR while they conducted this security task earlier in the tour. As such, with the proper warning and coordination, the commanding officer can have elements of recce squadron employed elsewhere without risk to his mission. If it were guaranteed that the commanding officer had access to recce squadron (a minimum of a troop for instance), this would preclude the requirement to reconstitute a BG recce platoon. While not occupied with legitimate divisional tasks, recce squadron could continue framework patrolling within the Canadian AOR in support of NFO. The mobility of the squadron is such that it can deploy just as rapidly from Banja Luka to Glamoc as it can from Velika Kladusa to Tomislavgrad. The squadron, if employed in this capacity, could easily remain based in Zgon and be supported through a similar current echelon system. In other words, by expanding the BG recce squadron's role to include an MND (SW) line of tasking, the potential of the Coyote squadron can be maximized at no cost in manpower and no appreciable loss in capability for the Canadian BG during framework operations.

ENHANCED CAPABILITY

Enhanced operations are conducted in response to a deteriorating situation that is likely to involve a threat to the safe and secure environment.

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Enhanced operations may be localized to the extent that specific elements of a BG in a specific area move to an increased force posture commensurate with a given threat. The role of the BG recce squadron, with its surveillance capability and turret weapons, in enhanced operations within the BG AOR should be relatively obvious. Formally, 'A' Squadron maintained a troop at two hours notice to move as a situational BG reserve. In reality, the entire squadron could be moving in response to a threat well within this same notice to move. From MND (SW)'s perspective, enhanced operations may also involve the creation of an all arms force (ultimately, a multi-national BG) that would be prepared to move across BG boundaries as necessary. A series of map, command and field training exercises (FTX) was conducted within MND (SW) to resolve some of the difficulties associated with a transition from framework to enhanced operations at this level. 'A' Squadron participated in all aspects of these exercises and appears as an attachment on the task organization of the BG designated as the lead. The FTX "Strong Lion" occurred during the period from August 28th to 31st 2000 and saw 'A' Squadron ultimately attached to the King's Own Royal Border Regiment (KORBR) BG along with a company from the 43 Czech Mechanized BG. 'A' Squadron's role, not surprisingly, was as a finding force in dealing with a rogue entity armed forces element (played by the BG from the Netherlands) in the Glamoc training area (Resolute Barbara Ranges). Five observation posts were deployed. 'A' Squadron monitored all movements of the rogue element, enabling the KORBR BG to fix and strike as required. Potential inter-operability difficulties were mitigated through the exchange of liaison officers and signals detachments. The exercise was an excellent multi-national training opportunity and exposed a sizeable portion of MND (SW) to the capabilities of the Coyote. There is no doubt that, from the MND (SW) perspective, there is a role for the Coyote in divisional enhanced capability operations.

CONCLUSION

Is it mission creep to propose that the BG recce squadron support both MND (SW) and the Canadian BG? Many would contend that their answer to this question was decided before having read this article. Notwithstanding the reader's definition of mission creep, I remain convinced that the BG recce squadron can take on a larger role without incurring significantly increased costs, if any. The opportunity exists not only to maximize the employment of the BG recce squadron, but to also showpiece a unique Canadian capability within a multi-national setting. As the commanding officer of the 3 PPCLI BG, Lieutenant-Colonel D.E. Barr, recently said, "one person's mission creep is another person's better mission analysis."

ABOUT THE AUTHOR...

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ENDNOTES

1. "Mission creep," an accepted yet unofficial term, occurs when one's mission, including plans and tasks, expands beyond that which was assigned from a superior.
2. Although referred to as a recce squadron, the battle group (BG) recce squadron in Bosnia should not be confused with the doctrinal brigade recce squadron. The BG recce squadron lacks an assault troop and exists with a much-reduced squadron headquarters and echelon. The BG recce squadron consists of 16 Coyotes, including six mast, six remote and four command variants.
3. These were doctrinal brigade recce squadrons.
4. 'A' Squadron was equipped with the Coyote prior to deployment to Bosnia, but as a Sabre rather than recce squadron.
5. Mission analysis is the process of extracting and deducing from a superior's orders the tasks necessary to fulfil a mission. Question four of this process asks whether there have been changes to the tactical situation that would possibly require some refinement to the mission or plan.
6. MND (SW) Operations Order 1/00 dated 1 April 00.
7. *Ibid.*
8. 'A' Battery, 1 RCHA, is deployed in a light gun artillery role as a divisional asset. That said, it spends much of its time conducting framework operations for the 3 PPCLI BG and has the assigned responsibility for the Glamoc area.
9. 'C' Battery, 1 RCHA, is configured as the 3 PPCLI BG's third rifle company.

"Keeping One's Freedom of Action" A Canadian Way of Waging War

by Lieutenant-Colonel Ian McCulloch, CD

The art of war is, in the last result, the art of keeping one's freedom of action.[1]

– Xenophon

In the First World War, neither side had any innate moral or technological superiority. It was more the practical adoption of realistic doctrines, which, among other things, recognized the limitations on command and control imposed by the existing communications technology, as well as the limitations of such weaponry as tanks or poison gas. Though the Great War has been characterized as the first great modern industrial war in which machines dominated the battlefield, it was human ingenuity and innovation that developed the various techniques, methods, applications and procedures.

In defining command, it can be noted that:

> command and control functions are performed through an arrangement of personnel, equipment, communications, facilities and procedures which are employed by a commander in planning, directing, co-ordinating and controlling forces and operations in the accomplishment of the mission.[2]

All sides had their elite fighting units, accomplished commanders and innovative weapons of war but none could be labelled as "superior" or as the ultimate "war-winning" element.

If any single aspect of the Canadian Corps could claim the moniker "superior" in relation to other corps of the British Expeditionary Force (BEF), Allies or even the Germans, then it was the "arrangements" and synergy of the Canadian Corps' command system which extended to its lowest levels of command. Effective tactical command for Canadians in the First World War can be characterized as a constant search for improvement. This included improving organizations, new technical means, and procedures to create an overall process in which information could be used correctly and allowing the resources of those organizations to be applied consistently to achieve the tactical mission.

Tactical command in the Canadian Corps can be examined from the perspective of the three tactical elements that have interacted continuously throughout military history: mobility, protection and firepower. The main impacts on tactical command and how it evolved to deal with these three ever-changing factors in warfare were doctrinal, organizational, technological, tactical (including training) and sociological changes. The underlying thread weaving all these catalysts together was the human dynamic of leadership and the fertile thinking environment created in the Canadian Corps by leaders such as Sir Julian Byng, Sir Arthur Currie, Raymond Brutinel, Victor Odlum and William Griesbach. Essential attitudes and important states of mind such as professionalism, confidence, and *esprit de corps* born of success "in accomplishment of the mission," grew in a climate where openness to ideas and the ability to speak frankly were welcomed.

Command and control is invariably bound up with numerous other factors that shape war, though it is virtually impossible to single out any "master principle" that clearly illuminates how it should always operate or the ideal command structure or process. No single weapon system, no single mode of communications, no single procedure, tactical technique or single system of organization was sufficient in itself to guarantee effective command and control. What is readily discernible, however, is that all of these elements which had significant impacts on tactical command and control in the Canadian Corps were constantly changing and evolving to meet the circumstances. It is also apparent that the Canadians enjoyed the advantages of semi-permanence in their organization and thus were the fortunate recipients of an enviable cohesion not seen in other British corps. As one Canadian brigadier recalled:

> It is true that the Canadian Corps was a marvellously cohesive organization and that the Corps Commander must have the credit for it. But the man in the ranks derived his esprit de corps from confidence in the machine that the Corps Commander created rather than in the individual himself, which after all, in my opinion, is the essence of military leadership. A Military organization built around the personality of one man is a weak organization from a military standpoint. A military organization that is impersonal, save from a common ***esprit***, is a perfect one.[3]

Major-General A.G. Frith of the British Army, who had served on Currie's staff, commented after the war that the Canadian Corps commander's success lay in the fact that he insisted on maintaining one's freedom of action and resisting orthodoxy if there was a better way. Of Currie's personal strengths, Frith believed that the most important one was the ability to recognize one's limitations:

> His strong will was checked from carrying him too far or too fast by his clear judgement, while, *per*

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contra, the will gave the necessary driving power on the course which judgement selected. Self-reliance he had in large measure but his common sense told him plainly where the limits of his knowledge and experience lay and he did not rely on himself in regions beyond these limits. Currie was not a clever man, but, on the other hand, he was certainly a very able one. He could and did make full use of the brains, the knowledge and experience of others. He was ever ready to take advice and able to discern what was good advice and what bad.[4]

This was the essence of Canadian leadership from 1916 onwards. Currie's example was followed at all levels of command, the "efficient man" going ahead, with "seniority and bull" being discarded in favour of tactical skill and knowledge. Currie's insistence that all were to provide him with feedback on lessons learned, no matter how trivial, illustrates the state of mind which permeated its way down the Canadian chain of command and imbued the command process with one of its most important assets: accessibility.

One is reminded of Brigadier General "Batty Mac" Macdonell and his comments to Lieutenant-Colonel William Griesbach on his openness concerning the Ross Rifle, highlighting the commanding officer's role in effecting necessary change.

> "A Good Commanding Officer makes a Good Regiment." Many have not the personality necessary at all to command men [underlining by Macdonell]. You have and I congratulate you on it. I should like to congratulate you also in the straight and fearless way in which you have reported on the Ross rifle. If only all COs would write or speak out as straight (not only about the rifle; also about all things concerning their commands) smooth working and officering would be largely increased.[5]

In reading after-action reports of the brigades and divisions of the Corps, one can see a steady evolution of ideas and attitudes being constantly fed up the chain of command. In the Canadian divisions, the recommendations of lower level tactical commanders were, more often than not, promptly actioned if they made good sense. This was in contrast to their British counterparts which were constantly shunted about to the detriment of training and the frustrated desire of innovative commanders to implement change. The example of the new platoon organizations that were recommended first by the British after the Somme experience being firmly established in the Canadian Corps before most British divisions had given it any serious thought in 1917, is a case in point.

The entire cyclical command process represented an irresistible synergy in the Canadian Corps that was far greater than just one man. Identifying this synergy for some historians has been difficult and, at times, incomprehensible. Many command and staff techniques, which only become evident by reading the operational orders of the day and by examining how intelligence was processed, remained in the military "shop culture" of the Canadian Corps and died with it after the war ended. The official histories certainly do not discuss the "procedures shaped by momentum, custom, word-of-mouth, adaptive informal practise and the inclination or whims of commanders and staffs"[6] which were integral characteristics of the unique Canadian command process. This process often functioned by ignoring the rules, conventions and orthodoxy layed down by their British counterparts. These deviations are only to be found in letters, memoirs, interview transcripts, autobiographies and little-read regimental histories.

Currie's complete reorganization of the Canadian Corps in early 1918, its subsequent restructuring and re-training to facilitate a new attack doctrine, is a perfect example of how a military organization might outwardly resemble another but be radically different due to personalities and the doctrine and philosophy they hold. The brigades and divisions were the primary beneficiaries of the mobility and firepower provided by the new engineer battalions and improved artillery techniques. They were also active and enthusiastic participants in relating the tactical lessons learned in all major battles and relaying them back up through the chain of command with criticisms, new ideas and suggestions.

In some battalions, organisations and methodologies were adopted before general acceptance and practice throughout the Canadian Corps. This justified Bidwell and Graham's claim that "the great change in tactics . . . probably started from below, in the form of a popular movement, the produce of the psychology of men in dangerous and difficult situations, who gather round any leader who seems sure of what he has to do."[7] Witness the Princess Patricia's Canadian Light Infantry's (PPCLI) highly developed and serious approach to gas warfare with its company anti-gas sections and equipment to combat this menace in late 1915, long before their brigade brethren followed suit. Or the PPCLI's creation of a section of bombers in each platoon a full year before the Canadian infantry platoon reorganizations of 1917. Or the 49th Battalion's self-contained infantry sections incorporating all platoon weapons that fought at Passchendaele, October 1917, months before the rest of the corps followed their lead in May 1918.

Command and control of brigades and divisions in the static defence of trench warfare was relatively easy, once deep-buried cables had come into vogue after Mount Sorrel in 1916 and good telephonic communications between brigade and battalion were virtually assured. But the Canadian Corps, with the exception of the long stint in the Lens-Vimy sector during the German Spring offensives of 1918, spent the remainder of the war training for, and mounting, set-piece attacks of varying intensity and with varying results. This meant the assault battalions left the cable grid system and its comfortable guarantees of communication, and launched into space equipped with various alternate means of communication which were not 100 per cent reliable. Several

different modes of communication such as visual lamps and panels, runners, telephones, and messenger dogs built in a certain level of communications redundancy, but each had their particular strengths and weaknesses based on time and space, or both.

Without a small, rugged, field-capable wireless, the brigade and divisional commanders in effect, had no more command and control capability over their troops than that of the Duke of Wellington at Waterloo. At least in Wellington's day, he had the additional advantage of being able to see most of the battlefield from an advantageous position, whereas the 1914-1918 infantry commander's perspective was confined usually to his dugout due to the increased availability and lethality of firepower on the modern battlefield.

Tactical command truly devolved upon the commander's forward position on the ground in 1916, in most cases, the battalion commander or lower. When it was shown at the Somme that the lack of technical communications and the dispersion of men necessitated by German machine guns, rifles and artillery fire made even company level of command not tactically effective, tactical command and control came to rest upon the shoulders of the platoon commander. Though dynamic brigade commanders like Brigadier General Macdonell of 7th Canadian Brigade (CB) would rightly insist that unit commanders be well forward in order to know what was happening, their situation often matched his own of being relegated to sitting beside a telephone line in order to respond to higher headquarters. The days of brigade and battalion commanders being well forward so that they could physically see the battlefield and know what was going on in order to make informed, rational decisions, were placed on hold during the First World War. The passing of the mantle of tactical command down to the platoon commander was an honest recognition of the technological limitations of the day.

In Martin van Creveld's *Command in War*, he notes that "the success of a given command system at any one time and place constitutes no guarantee of its success in others, even where technological and other circumstances are not fundamentally different."[8] Canadian and British operating procedures were essentially the same until 1918, and had to be in order for the Canadian Corps to be able to "plug" into and be understood within the larger context of the BEF. But it was downwards, throughout the corps command hierarchy, which controlled its own firepower, mobility and protection resources, that a unique Canadian way of waging war became possible. Within its assigned sector, the Canadian Corps was essentially the master of its own destiny. The Canadians adapted and refined the British command and control functions to suit their own evolving doctrine and organization. Because the Canadian Corps ran its own courses and trained its own commanders at the Canadian Corps Training School and back in the United Kingdom, it could effectively ensure that its doctrine was disseminated and thoroughly understood by the commanders at all levels who were going to use it.

Another development which strengthened the command system was the adoption of the principle that all commanders should be able to operate on a command level at least two levels above their current appointment and responsibility. Training prior to Vimy in the winter of 1916 and 1917 first emphasised that knowledge of the mission and objectives should be the purview and responsibility of all ranks making the attack, so as to ensure the attack did not founder when leaders were killed. At Passchendaele in October 1917, many Canadian battalions saw private soldiers leading platoons and sergeants leading companies effectively by the end of the day.

By 1918, the Canadian Corps had made significant changes in decentralising its command and control functions in anticipation of open warfare and the increased levels of uncertainty that would arise from moving forward from static communication systems. They established detailed operating procedures that had flexible "mission-oriented' orders for ground commanders so that initiative and flexibility were maintained. Commanders at all levels were trained to operate at higher levels thereby creating command redundancy in sections, platoons, companies and battalions in anticipation of casualties.

The Left-Out-of-Battle procedures developed at the Somme, 1916 would be maintained throughout the war as another measure to ensure some training and command expertise was always maintained in the brigades. There was increased emphasis on individual combat skills as well as co-operation between all arms. Integral firepower at the lowest levels of tactical command—the section and platoon - was doubled and artillery and mortar techniques were improved in order to provide better indirect support. All of these developments, in large or small part, were shamelessly borrowed from the successful tactics used by German *sturmtruppen* in their 1918 Spring offensives. Rather than just issuing orders to the effect that these new procedures would be utilized (a method followed by the BEF with their disastrous 1918 attempt to copy the German style of elastic defence), the new tactical and technical procedures were constantly practised and refined in Canadian training schemes. All commanders and staffs were expected to participate in these schemes.

Martin van Creveld has claimed that "the history of command in war consists essentially of an endless quest for certainty—certainty about the state and intentions of the enemy' forces; certainty about the manifold factors that together constitute the environment in which the war is fought, from the weather and the terrain to…the presence of chemical warfare agents; and, last but not least, certainty about the state, intentions and activities on one's own forces." That certainty, he claims, manifests itself as the product of two factors: the amount of information available for decision-making and the nature of the task to be performed. Van Creveld states that the bigger and more complex the task, the bigger the demand will be for more information to carry it out. Conversely, when information is insufficient, he argues, (or it is not timely, too much to process or just

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dead wrong) a fall in performance will automatically ensue. "The history of command can be thus understood in terms of a race between the demand for information and the ability of command systems to meet it," concludes van Creveld. "That race is eternal: it takes place within every military (and indeed, non-military) organization, at all levels and at all times."[9]

Effective *operational* decisions are only possible when good *informational* and *organisational* decisions precede them. The *organisational* decisions are the ones that have determined the chain of command for the execution of operational decisions and the latter's subsequent allocation of the correct resources. *Organisational* decisions also put in place the optimal command structure for the flow of information and its timely processing. *Informational* decisions, while not actually articulated in the command process, other than in a written appreciation or intelligence summary, are critical to the formulation of the commander's *operational* decision. To effectively accomplish their missions, all commanders had to establish what the situation was and how that situation related to the mission they were trying to accomplish.

To that end, the importance of the fledgling and highly innovative Canadian Intelligence Services, augmented by the air force's aerial reconnaissance and photography and the artillery's sound ranging, flash spotting and survey capabilities, cannot be overstated. Intelligence was actively and aggressively pursued throughout the Corps. The first indication of its importance at the brigade level was the addition of a Staff Captain "I" to every Canadian infantry brigade (CIB) in 1915, giving them a clear advantage in this function over their British cousins. This officer acted as the overall co-ordinator of the intelligence-gathering efforts of the four infantry battalion scout platoons. He was also the principal staff officer supervising the brigade's trench raiding plans and patrolling plans, responsible for liaison with all supporting arms of the brigade, and the officer who went forward during a brigade level or higher attack as the commander's "eyes and ears". The Staff Captain "I" became an important component in the brigades' abilities to maintain effective tactical command and control as well as contributing to the corps' overall intelligence gathering process.

The Canadian command system that evolved by 1918 had the necessary time and staff to process information, to train and make detailed logistical and operational plans for major operations, a process that ultimately worked like a well-oiled machine. It was only with decreasing amounts of information that *informational* decisions, which begat *operational* decisions, were hindered, thus making the latter more difficult to make. In the final analysis, the *organisational* decisions of the Canadian Corps taken prior to the Last 100 days gave the corps the balance to be able to fight through and persevere in the face of uncertainty. The important caveat that had applied in all restructuring of the Corps was that anything that was not conducive to the organisation's efficiency with regard to administration and combat capability was eliminated. The brigades and divisions by 1918 to a certain extent were structured to be more self-contained and mentally prepared to function effectively on less information.

For example, one can see the effects of compressed battle procedures and preparation on a brigade like the 7th Canadian Brigade that participated in all the battles of the Last 100 Days. Effective *operational* decisions were hamstrung by the lack of time and a lack of information on the enemy facing Canadian troops. Well and truly did Wellington say: "In military operations, time is everything."[10] In essence, the brigade encountered its heaviest fighting in the second and third phases of battles such as Amiens (Parvillers), Arras (Pelves and Jigsaw Wood) and Cambrai (Marcoing Line and Tilloy), primarily because it was an echelon brigade passing through to the unknown and "uncertainty" of the depth battle. The other brigades that had fought the "break-in" battles had participated in the more "certain" and well-planned first phases of battle which had had the benefit of corps artillery and other resources such as tanks and aircraft. The battles that 7th CIB participated in during the 100 Days as an echelon brigade were, thus, harder and more demanding battles in terms of tactical command and control than the latter type of battle. Only a well-trained and well-led brigade with well-developed operating procedures could manoeuvre, perform and achieve success in such an environment of "uncertainty." It can be stated conclusively that by the end of the war, the Canadian way of waging war and its command and control process that animated it did not resemble the 1914 paradigm, just as 1918 tactics, techniques organization, and weapons did not resemble their 1914 antecedents.

The shift occurred in Darwinian fashion. The lethal environment of the modern industrial battlefield, constantly sustained by emerging technologies as well as by improved techniques for older existing technologies, demanded rapid evolutionary adaptation in order for Canadian troops to survive. Some Canadian historians such as Bill Rawling have claimed that men using innovative tactics broke the stalemate, more "technicians" than examples of "glorious soldiery" who knew how to use "the tools of war" to their advantage. This statement, however, is only partially correct.

The true catalyst that brought about tactical efficiency was the innovative reorganisations that took place in the Corps command system between 1916 and 1918 and the development of command techniques and applications that recognised the limitations of technology and worked around them. Canadians were not content to confine their actions to what available technology could do, but determined to keep their freedom of action constantly open. The new tactical systems that evolved, more often than not, were derived from within the command system, rather than imposed externally.

The lumbering beast that was an army corps of the First World War needed a clever and meticulous staff to animate its nervous system and make it

perform, and in this regard, the Corps was lucky to receive, almost from the beginning, some exceptional and gifted British staff officers. Through late 1916 and 1917, a process of Canadianization accompanied by the wide-spread acceptance of the need for professional staff training saw the Corps well stocked with staff officers who were intimate with the needs of the Corps and how it should work. Improvements in training, doctrine and organization were all functions of command and were implemented successfully, not by the fighting men of the corps, but by its commanders, who in turn were served admirably by their staff.

The transformation of the Canadian command process from the corps level down to the section was made possible only by an accompanying change in the mental approach of how modern industrial war should be waged —the doctrine—hence the paradigm shift. Canadian-made doctrine was responsible for the resulting tactical effectiveness of the Canadian Corps as a whole, an organisation that, by 1918, possessed a common esprit, or as Brigadier General "Ox" Webber termed it, "had a life" with "family feeling present."[11] It was truly an elite and highly professional fighting formation of which all Canadians can be justifiably proud.

ABOUT THE AUTHOR...

Lieutenant-Colonel Ian McCulloch joined the Canadian Forces in 1977 and has held various appointments in The Royal Canadian Regiment. He holds an honours degree in Journalism from Carleton University and a Master's of Arts in War Studies from the Royal Military College of Canada. Lieutenant-Colonel McCulloch served on exchange with the 1st Battalion Royal Regiment of Fusiliers and as Commanding Officer of the Black Watch (Royal Highland Regiment) of Canada. An avid student of military history, Lieutenant-Colonel McCulloch's writings have appeared in numerous journals and books. He has served as a historical consultant for the Arts and Entertainment Channel and the Canadian Broadcasting Corporation. Lieutenant-Colonel McCulloch is currently Deputy Director of History and Heritage at National Defence Headquarters.

ENDNOTES

1. Xenophon, cited in Robert A. Fitton, *Leadership: Quotations from the Military Tradition.* (San Francisco: Westview Press, 1990), p. 115.
2. Frank M. Snyder, *Command and Control: The Literature and Commentaries*, (Washington, DC: National Defence University Press Publications, 1993), Command and Control, p. 11.
3. McGill University Archives [hereafter MUA], *Col Hugh M. Urquhart Papers* , Acc. No. 393 [hereafter UP], BGen Alex Ross Interview, p. 2.
4. MUA, *UP*, MGen AG Frith Interview, p. 13.
5. NAC MG 30 E 15, *Griesbach Papers*, File 11, Letter dated 12 May 1916.
6. Roger Beaumont. *The Nerves of War: Emerging Issues in and References to Command and Control.* (Washington, DC: AFCEA International Press, 1986), p. 12.
7. Shelford Bidwell and Dominick Graham. *Coalitions, Politicians & Generals: Some Aspects of Command in Two World Wars*, (London: Brassey's, 1993), p. 54.
8. Martin van Creveld, *Command in War*, (Cambridge, Mass: Harvard University Press, 1985), p. 261.
9. Van Creveld, pp. 264-65.
10. Arthur Wellesley cited in Fitton, *Leadership*, p. 77.
11. MUA, *UP*, BGen Webber Interview, p. 3.

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Auftragstaktik and Disorder in Battle

Learning to "See the Battlefield" Differently

by Lieutenant-Colonel (ret'd) Chuck Oliviero, CD

Most visions of future battlefields are referred to as "chaotic". If Henri de Jomini's belief that war really is a "violent, and an impassioned drama," and Carl von Clausewitz's concepts of "chaos and friction" are correct, then it would seem to me that too many leaders tend to *see the battlefield* incorrectly, or at least unrealistically. What I mean is that most of us either willingly or, unwillingly through drills, attempt to bring order to something, which is inherently disorderly and chaotic. Would it not be better to learn to live within this disorder? If battle is already chaotic, then why not abandon any attempts to bring order and strive to bring even more disorder to the situation? Before investigating this issue further, we need to review some history.

As Owl likes to remind Pooh, "It is always best to begin at the beginning." The entire history of the development of *Auftragstaktik* revolved around one simple question: How did the Prussian Army view warfare? All other issues, however interesting or important, are secondary to this pivotal, philosophical question. From an intellectual perspective, the simple answer was what Colonel Trevor Dupuy called the institutionalization of chaos in battle.[1] This concept encapsulated all aspects of *Kriegskunst*,[2] from General August von Gneisenau's *Auftragstaktik* to General Gerhard von Scharnhorst's Generalstab to General Helmuth von Moltke's minimalist approach to orders, "*nicht mehr befehlen als durchaus nötig…*"[3] The conviction that war was a violent, irrational, and uncontrollable human activity was, and remains to this day, the most identifiable embodiment of the Prusso-German school of war.[4] While other armies strove to bring parade-square order to the battlefield, the Prussian Army ensconced the Clausewitzian concepts of the fog of war, friction and chaos into its tactical doctrine.

This is not to say that Prussian tactics were chaotic. On the contrary, the use of rigid discipline and effective battle drills gave Prussian commanders at all levels the potential to exploit the changing face of battle. The great paradox of Prussian discipline was that precision drill and unquestioning obedience could instil initiative and independence at all levels, from infantry section to army group.[5] But before Prussian soldiers could be expected to exercise initiative, they had to be psychologically prepared to act independently and to accept the utter confusion, which Clausewitz had taught was the normal state of affairs in combat. This was *fundamentally* different from what all other armies were training their soldiers and leaders to do.[6] The Prussian key to victory was not to attempt to impose order on chaos, but rather, to take maximum advantage of this chaos and to exploit it for their own tactical advantage.

The Prussian Army had not always embraced chaos. Its acceptance of this concept can be traced to the French Revolution. In a striking parallel to today, the military societies of this era were openly discussing new tactics, new leadership, and the idea of giving individual soldiers more freedom to act. Pre-Revolutionary armies, as epitomized by the Prussians under Frederick the Great, had worked diligently at perfecting battlefield drill movements. Under Frederick, the army had been a formidable force precisely because of his near maniacal genius in the application of this battlefield drill.[7] When Napoleon transformed warfare by demonstrating his mastery of "battlespace dominance,"[8] what he was actually doing was applying, in his own unique manner, his new interpretation of battlefield drills. When Napoleon's intent was understood and applied, as with the ruthless pursuit of the Prussian Army to the Baltic after the Battle of Jena, victory had ensued.[9] It was this unique, and pivotal, interpretation that Scharnhorst, Gneisenau, Clausewitz, and Moltke had grasped and then institutionalized in the Prussian Army.

All armies can be considered to have a trinitarian structure comprising mind, body, and soul. The mind of an army concerns doctrine, strategy, and tactics. The body is its structures, organizations, and chain of command. The soul is its *élan, esprit de corps*, or, in the case of the German Army, *Korpsgeist*, as represented by the army's leadership. In Prussia's case, Frederick had been the mind of his army. His tactical brilliance and the strategic use of his army had made his country a military power out of all proportion to its size and national wealth. In his case, there was little question of an army doctrine or strategy. Although Frederick did write a book describing his views on how to fight, the army and its regiments were very much his personal possessions.[10] The relationship between the army and the king was deeply feudal, and Frederick's view of warfare did not include giving subordinates freedom of action.

For Prussian soldiers to break this mold and translate the Clausewitzian understanding of the nature of war into action, to exploit chaos, a critical precondition needed to exist. Exploiting chaos through *Auftragstaktik* required the leadership philosophy, or "command climate," in the Prussian Army to be such that soldiers at all levels felt that they had the freedom to act as the situation dictated. Independence had to be balanced against the need to obey orders and maintain discipline. This was no simple task and, of course, was inextricably

linked to the non-military complexities of self-image, socio-economic relationships and civil-military relationships, among manifold other factors. Certainly, such change would take time. An army, which had been based on iron discipline and the lash, was not about to embrace independent action overnight. But the transformation had begun early.[11] Immediately after the disaster of Battle of Jena, Scharnhorst and Gneisenau had insisted on the teaching of the successful pursuit in the *Allgemeine Kriegsschule* (forerunner of the famous *Kriegsakademie*). Later, in the aftermath of Waterloo, Field Marshal von Blücher and his Chief of Staff Gneisenau pushed hard to pursue the retreating French into Paris. But *wünschen heisst nicht können.*[12] Although the Prussians had been taught the importance of independent action, they only pursued the retreating French aggressively when directly pushed by the Field Marshal or the Chief of Staff. Senior commanders demonstrated very little initiative. Nonetheless, Blücher and Gneisenau were relentless, and the French were denied the ability to take up defensive positions in front of Paris. Success in instilling initiative was limited; but compared with what the army had looked like in 1806, less than a decade before, there was the promise of better performance to come.

Secondly, there had to be a commonly held perception of the nature of battle. The Clausewitzian view of chaos, friction, and disorder, was this common perception. Nevertheless, this alone was not enough, for the understanding that war was chaos was but one half of the equation. The other half was what this understanding meant to soldiers in actual combat. It meant that a soldier had to think for himself. In this way the Clausewitzian view of battle combined with the Napoleonic principal of freedom of action. This principle of freedom, as expressed by Gneisenau's control by directives, gave every Prussian soldier the understanding that he needed to act independently *within* the chaos of battle, even to the extent of creating more chaos.[13] Clearly, Scharnhorst's phlegmatic Germans"[14] had become transformed. Moreover, the imposition of order upon chaos by superior commanders, as anathema to the Clausewitzian model, was avoided. This gave all soldiers the freedom of action necessary to make decisions based upon their local circumstances, guided only by their own judgment and their commander's intent. Although there may not have been any need to disregard orders, knowing that they could, if necessary, gave great psychological impetus to the pursuit of tactical success. This freedom to act strengthened the mutual trust between leader and subordinate and lent dignity to the ability of the individual soldier; *"esalta l'intelligenza e le capacità del soldato."*[15]

The marriage of the Clausewitzian model of war with the Gneisenau dictum of acting in accordance with a commander's intent formed an intellectual framework unlike any that existed in any other army. And it was this framework that breathed life into *Auftragstaktik*.

So much for the historical background. Let us now look to the present. For the sake of argument, let us consider that a battle is a physically closed system. There is a basic law of physics, which states that there exists in all systems a given amount of entropy or disorder (what Clausewitz referred to as "friction"). This law also states that the entropy in the system will continually increase. This increase continues to the point where all order will break down and only chaos will remain. It is this law, for instance, which states that the universe will eventually gain so much entropy that everything will eventually grind to a shuddering halt.

Fine, but what does this have to do with battle? Well, assuming that our theoretically closed battle reaches the point that there is so much entropy or disorder that no further fighting can carry on, then the side which has forced this result will win. The aim of fighting might then be to survive this disorder longer than the enemy. Allow me to elaborate. Simply put, if a commander is more ready, more willing and more able than his enemy to accept confusion, uncontrolled situations and general disorder, and if he has trained his subordinates to feel the same way, then he will survive the confusion of battle longer than his enemy. Victory will be his. The concept is not as far-fetched as it may seem at first. There are numerous examples from the Second World War alone where Allied troops broke down in confused battlefield situations, thereby giving up tactical advantages they had already won. The *Wehrmacht*, however, had a different view of battle and the German soldier was trained (based on a long tradition, as has been seen) to feel more comfortable in unsure, dangerous and insecure scenarios. Commanders at all levels could be confident that their subordinates would, in all probability, carry on in spite of the lack of orders or direct instructions. Part of this success, of course, was due to the famous German command philosophy of *Auftragstaktik*. But more importantly, the Germans *saw the battlefield* differently than did the Allies.

There was rarely an attempt to organize or order the disarray of battle. *Wehrmacht* soldiers had been trained to take full advantage of the confusion and the inevitable breakdown in the chain of command. They were also keenly aware of the fact that Allied soldiers did not work well in this environment and that they were very dependent upon their officers for decisions. The *Wehrmacht* soldiers therefore took full advantage, everywhere infiltrating and counterattacking. They did all that they could to INCREASE the amount of confusion and disorder, knowing full well that this would be to their tactical advantage.

So what? Well, there is no reason that Canadian soldiers cannot be trained in this way. Our soldiers are capable, intelligent, and most importantly, they have great amounts of initiative. Our doctrine has espoused the form, if not yet the philosophy, of chaotic battle as espoused by Mission Command. Our leaders need only demonstrate that we are willing to accept more independence from subordinates that they expect them to carry out the mission in spite of a breakdown in communications or the death of a leader.

Canadian leaders need to demonstrate to their soldiers that they are willing, ready and able to *see the battlefield* in other terms.

Lieutenent-Colonel (ret'd) Chuck Oliviero, CD

ABOUT THE AUTHOR...

Lieutenant Colonel (ret'd) C.S. Oliviero has a BA in history and an MA in War studies from The Royal Military College of Canada. He is a graduate of the two- year German General Staff course in Hamburg. Mr. Oliviero has been studying Auftragstaktik for almost twenty years. Mr. Oliviero's background is in armour and armoured reconnaissance. He commanded the 8th Canadian Hussars (Princess Louise's) in Germany. He was also a member of the Directing Staff at the Canadian Land Force Command and Staff College (CLFCSC) and later Chief of Staff of the CLFCSC. He is currently employed with the Army Simulation Centre and is working towards a doctorate degree from The Royal Military College of Canada.

ENDNOTES

1. Colonel Trevor Dupuy, *A Genius for War: The German Army and General Staff, 1807-1945*, (Englewood Cliffs NJ, 1977), p. 103.
2. The Art of War.
3. From Moltke's *Verordnung für die höheren Truppenführer*, (Instructions to Senior Commanders) which the Chief of Staff issued 24 June 1869, as found in Dirk W. Oetting, *Auftragstaktik: Geschichte und Gegenwart einer Führungskonzeption*, (Frankfurt am Main, 1993), p. 104. "Generally speaking, one would be well served only to order that which is absolutely necessary."
4. The author's personal experience, during the two year General Staff Course in the Führungsakademie, was that this aspect of German warfare was the most elusive for foreign officers to grasp. Foreign officers, and particularly those from Anglo-Saxon backgrounds, had difficulty in appreciating the depth of conviction that Bundeswehr officers have that the Clausewitzian view of war is correct.
5. Dupuy, p. 103.
6. The concept is a simple and an ancient one. The idea of military drill, whether it was the Macedonian *phalanx* or the British battalion in line was that a commander imposed order upon disorder. Although the Prussian army did not give up battle drills, commanders and soldiers were being allowed the freedom to act as they needed in accordance with their local situations. See Dupuy, *passim*.
7. See Thomas R. Phillips, *Frederick the Great: Instructions for his Generals*, (Harrisburg, PA, 1944).
8. See Douglas A. MacGregor, *Breaking the Phalanx*, (Westport CT, 1997), p. 40.
9. Dupuy, pp. 35-36.
10. Frederick the Great: *Instructions for his Generals*.
11. This passage is based upon the German Army Military History Research Office publication, *Rückzug und Verfolgung: Zwei Kampfarten, 1757-1944* (Stuttgart, 1960), pp. 235-36 as quoted in Dupuy, p. 36.
12. A German army expression meaning: "Wishing does not mean being able to do it".
13. This is one of the principles of Manoeuvre Warfare as expressed by Lind, *Manoeuver Warfare Handbook*, (Boulder CO, 1985).
14. R.R. Palmer, *The World of the French Revolution*, (New York, 1971), p. 119.
15. Oberst Gerhard Muhm, *La tattica tedesca*. "…exalts the intelligence and capabilities of the individual soldier." Specifically, the text is from a monograph written by Colonel Muhm (*Wehrmacht Companie Chef, Eisenkreutz I und II Klasse, Bundeswehr Oberst im Generalstabsdienst*) and given to the author.

Yeoman Warder John Keohane marches down Water Lane with a Canadian escort during the nightly Ceremony of the Keys at the Tower of London. Ninety-two Canadian soldiers from Princess Patricia's Canadian Light Infantry performed public duties in London from 29 April to 22 May 1998.

The Stand-Up Table

Commentary, Opinion and Rebuttal

WANNA VENT?

Comments from the field indicate that readers may have some confusion regarding the purpose of the "Stand-Up Table." The aim of this section of *The Army Doctrine and Training Bulletin* is to provide a forum to not only comment on articles and features that appear in this publication, but also to comment on any issue within the Army or the Canadian Forces. Commentaries of one to three pages are welcome. Opinionated pieces from all ranks are encouraged.

Readers should note that this is not an invitation for diatribe. If your submission is soundly argued, it will be considered for publication.

For those concerned that their comments might invite repercussion, please contact the Managing Editor (contact information on the inside cover) to consider a possible means of avoiding this.

We hope to hear from you.

On Making Soldiers: Socialization and the Army

Lieutenant Scot Ship, an infantry platoon commander with the Princess of Wales Own Regiment and sometimes Recruiting Officer and QL2/3 Course Commander, writes…

As part of the ongoing attempts to modernize Canada's Reserve force, the Reserve QL2 (Recruit) Course has recently been severely modified. The goal of the modification was to reduce the length of time of the course in order to be able to teach more courses. It now takes only 16 days to complete "basic training." On the cutting floor included many needless lessons, such as how the administrative system works and how to write up proper military memorandum, that recruits forgot as soon as the course was over and did not learn again until they became leaders themselves. These modifications would presumably lead to a more efficient course.

Unfortunately, such cuts have also removed some of the most vital aspects of recruit training. The most important skills and values that must be learned at the recruit level are teamwork, discipline and fitness. Teamwork is taught outside the classroom, at night, when the recruits prepare for the daily inspection of their equipment and their quarters. It is not simply the level of cleanliness that is being inspected: it is the requirement for the recruits to observe a single, universally applied standard throughout a course and to work together to get everything cleaned up. Four critical inspection periods have been removed from the new course.

Discipline is a cornerstone of military effectiveness. Military discipline is what separates soldiers from an armed mob. Discipline is taught to recruits through drill on the parade square. By making the recruit react quickly and precisely to drill commands, the drill staff is helping mould the recruit into someone that will follow the commands of his/her leader in other, more stressful, situations. Coping with the mental and physical stress of learning drill creates bonds of trust within a recruit course. The number of drill lessons has been cut by almost half.

A serious problem faced by the Canadian Forces is the fact that the Canadian population is slowly becoming increasingly unfit. Physical fitness is very important to the military because of the physical nature of many of the duties. Since the Reserves have a predominantly combat-oriented structure—there are many more Combat Arms units as opposed to Combat Support units—the requirement for physical fitness is pronounced. A physical fitness test is one part of a series of tests required to enter the military. Physical fitness has other benefits such as increased mental tolerance and long term health. The "old" recruit course had a physical fitness component that built up recruits to a 13km forced march. This march was as much a mental challenge as a physical one. Having the recruits prove to themselves that they could do it was an important part of the training. It had everything to do with pride and self-esteem. The march also helped ensure that recruits that graduated to their trade training had a basic level of fitness. The entire physical fitness component of the modified recruit course has been removed.

The Recruit Course is supposed to adapt civilians to military life. This adaptation should involve a series of physical and mental challenges that force the recruit to grow and find new personal limits. Such challenges also force the recruit to build bonds that develop into friendship, teamwork and trust. Completing a recruit course should give the recruit a feeling of accomplishment, that she/he has truly earned something. The worst thing that we could do to our recruits is baby them and leave them feeling that they were not pushed. The worst thing they could say at the end of such a course is "You know, I really thought that it would be more difficult."

On manoeuvre warfare and other matters. Commentary on "Is There Room for Manoeuvre? Whither Mission Command" and "Their Intelligent Initiative and its Cultivation: A New Leadership Doctrine for Manoeuvre Warfare" by Second Lieutenant Mark Gaillard, Volume 3, No. 4/Volume 4, No. 1, Winter 2000/Spring 2001.

Lieutenant-Colonel (ret'd) Chuck Oliviero of the Army Simulation Centre, Kingston, Ontario, writes…

I am compelled to begin my letter with compliments. The Volume 3, No. 4/Volume 4, No. 1 Winter 2000/Spring 2001 issue of the Army Doctrine and Training Bulletin (ADTB) is a well-presented compendium on Manoeuvre Warfare (MW), a subject dear to my heart. I especially enjoyed 2Lt Gaillard's prize-winning essay. Mr. Gaillard has synthesized MW theory very nicely although I feel obliged to point out that it is not entirely clear that there is no monolithic school of Manoeuvre Warfare. There are actually four of them: German, U.S. Army, USMC and British, and they sometimes are at loggerheads. Nonetheless, this is a small point and in no way diminishes the strength of Mr. Gaillard's article.

It has now been over twelve years since the first article on MW appeared in a Canadian publication (Major CS Oliviero, "Smaller Can be Better" *Canadian Defence Quarterly,* Vol. 18, No. 2, Autumn 1988). In the intervening years, MW has gone from being a novel curiosity to a scorned concept to doctrine to a hackneyed phrase. Although I am heartened by an ADTB that is devoted almost entirely to MW, I cannot help but wonder how much real progress has been made. I keep waiting for someone to write about the "manoeuverist approach" for ROWPU[1] emplacement.

The questions posed by the Managing Editor remain valid and poignant even after these dozen years. The fact that this is so belies the fact that MW as doctrine still has a way to go before being correctly understood by the Canadian Army. In some instances the Army has made great strides. In my current life, I get to see every commanding officer in the Army and I am pleased to report that the units and the brigades are well on their way to making MW "invisible". What I mean is that many of the tenets of MW have become so ingrained and well understood that they now comprise business as usual. This bodes well for the future.

I wish I could say the same for those leaders outside the Field Force. The Managing Editor's most pressing question, in my opinion, was whether we could instill the intellectual robustness to apply these methods of operations or mission command style. I wonder. An army that truly trusted subordinates' abilities to make decisions might well ask itself why it was pushing so hard towards a C^3 system that will conceivably allow Joint Task Force Commanders to track the movement of every vehicle in the force.

I am certainly not against the digitization of the battlefield. I am no Luddite, far from it. What worries me is the propensity to follow our U.S. brethren down the blind alley of constantly seeking *technological* solutions to what are *human* problems. Mission Command is a human solution to a human problem—the commander cannot be everywhere at once so he must train, and then trust, his subordinates. The world's largest technological society has deluded itself into believing that machines will solve what are really leadership problems. My fear is that we, too, have succumbed to this siren song and that we are headed for the same intellectual shoals.

I suppose the answer to your question is that we don't know yet, but that we must continue to push for a better understanding of war in general and of Manoeuvre Warfare theory in particular. As an army, we are late out of the blocks on this issue but the *ADTB* has made great strides in helping the Army catch up. My compliments.

1. For the uninitiated, this initialism means Reverse Osmosis Water Purification Unit (Managing Editor).

On "The CH-146: An Armed Helicopter for the Canadian Army" by Major D. Houde, The Army Doctrine and Training Bulletin, Vol. 3, No. 1, Winter 2000/Spring 2001.

Captain Tom Bradley of COS J3 writes…

The article on equipping the Griffon helicopter with an anti-tank and fire support capability has failed to answer one important question. While I cannot pretend to know the technical details of such a system, I must ask the question "Yes, while it might be technically possible to arm the Griffon, *why* would we?"

The use of attack helicopters is a well-established requirement for all modern militaries; indeed most western armies realize it as one of the primary combat systems of the land force. Unfortunately, Canada lacks this capability and will likely not obtain it in the near future. As proposed in Major Houde's article, the armed Griffon does not provide a capability anywhere comparable to what is currently fielded, or to be fielded shortly by our key allies. There is a danger that as the Army of Today develops its vision for the future, the armed Griffon would become a case of equipment driving doctrine, not of doctrine-driving equipment, and in this case, it would be to the detriment of the combined arms team.

The Griffon is not a military helicopter. It is rather a civilian pattern helicopter with some military systems and an appropriate paint scheme. Operational deployments have shown that when

equipped with an armour and defensive suite, the helicopter retains limited lift capability.

Now, assuming that the armed Griffon would be employed at the Forward Edge of the Battle Area (FEBA) and not for Rear Area Security, and that it operates 3-4 km behind the FEBA to obtain the necessary protection from direct fire systems given its vulnerabilities. This would mean a Hellfire (longest range of the proposed weapons systems) equipped helicopter would be firing into the same area as covered by our current direct fire assets. While our current lack of deep fires remains unresolved, this proposal adds another system to an already saturated battlefield.

Given its vulnerabilities, the use of the Griffon for anything beyond this scenario would needlessly endanger our aircrews and helicopters for little gain while taking them away from the equally important roles of casualty evacuation, and command and liaison.

Therefore in order to gain the designation as a nation operating attack helicopters, we transfer unsuitable airframes away from legitimate roles and gain little tactical capability. If money were truly the driving force for a move to such a system, we would be better served by investing this same training and money in more modern munitions for our existing weapons systems.

Ideas fuelled from "Are We Teaching the Right Tools for Our Doctrine?" ADTB, Vol. 3, No. 4/Vol. 4, No. 1, Winter 2000/Spring 2001

Major (Ret'd) Roy Thomas, MSC, CD, a Peace Support Operations Training Consultant writes…

Second Lieutenant Marc LaFortune concludes his article by stating that processes, tools and products must reflect the premise that war is an art, not a science. I would add that no process is more important than the one that prepares leadership. Therefore one of the key tools in the training of future Canadian field commanders, the simulation war game, must be examined, if only to respond to criticisms raised by one of today's proponents of manoeuvre warfare, Robert R. Leonhard.

In Leonhard's most recent book, on principles of war in the so-called information age,1 Leonhard credits simulations, which he defines to include the National Training Centre (NTC) and other training centres "as generating one of the most significant revolutions in military capability" in U.S. Army history. "Games" outcomes are taken very seriously, even impacting upon career progression." He then goes on to say that computer war games "provide the greatest single influence upon our doctrine today." If simulation is so important in the American training system then Leonhard's critiques should be considered carefully.

His first major critique is that simulation ignores the moral domain of conflict. The "never-say-die behaviour of the enemy in games or NTC scenarios teaches American soldiers that to defeat the enemy, they must destroy them." He argues that the art of war consists largely of learning how to defeat the enemy without complete destruction. Readers should evaluate recent simulation training on which they have participated to determine whether Leonhard's criticism applies to Canadian versions as well.

His second critique is significant. Simulations in which opponents never flee, although suffering over 30 per cent losses, impacts on logistics planning. Ammunition is needed to deal with these "die-hards"! As a result, in his own Gulf War experience, he found that he had too much ammunition in his vehicles but not enough fuel readily available. Rightly or wrongly, he attributes the mindset that created this situation to a decade of war gaming and NTC, which is exactly where the US places the credit for their Gulf War performance. If we wish to teach the right tools, as Marc challenges those interested in training to do, then this critique of Leonhard's must also be evaluated against the most recent simulation in which the reader has participated.

Leonhard has some suggestions for improving simulations but I think that Canadian officers, thinking about war as an art, within a Canadian context, are better placed to make suggestions. I hope these few lines from a retired old soldier who was a former doctrine author in the Cold War of the 1980s serves to provoke further debate in the pages of this Bulletin.

1. Leonhard, Robert R., *The Principles of War in the Information Age.* Novato: Presidio Press, 1998 (Managing Editor).

Reply to "The Infrastructure of Amphibiosity", Volume 3, No. 4/Volume 4, No. 1, Winter 2000/Spring 2001, by Sergeant Arthur Majoor

Major P.J. Williams of the Artillery School writes…

It was with great interest that I read Sergeant Majoor's comments on my previously published article concerning "amphibiosity" (Volume 3, No. 3, Fall 2000). In particular, I wish to respond to one aspect of his commentary, to wit, "Amphibiosity…requires a huge restructuring of the Canadian Forces."

That is exactly my point.

At a time when our Army (and one would assume the entire CF) is undergoing a period of transformation, and when we are told to challenge long-held assumptions and encourage new thinking, I believe a fundamental change is required in the way we do things, including how we deliver, nay *project*, capability. My view remains that a CF which can deploy joint forces from the sea is much more relevant to our future than one reliant on the venerable "Herc" and bases ashore. The Navy has come on board, so to speak, and their Afloat Sealift and Logistics Capability (ALSC) vessel is a definite step in the right direction and represents a paradigm shift from what was previously a largely Anti-Submarine Warfare (ASW) focus. This is a project that will enable *the Army* to transport troops, vehicles and equipment far from our shores. In view of our government's expressed desire to be "quickly in, quickly out" in future operations, a force which can be rapidly projected, employed, sustained and recovered from sea to land makes a great deal of sense. For their part, the willingness of the Air Force to greatly reduce their CF-18 fleet is proof, if any more is needed, that at least one service is willing to sacrifice some sacred cows. Should we in the Army not be doing the same? True, we do not have an amphibious tradition in the Army; but then, neither did we have the Colours (if I can be permitted a momentary lapse into parochialism) deployed on a peace support operation until someone agreed it was a good idea.

In fairness to Sergeant Majoor, I admit that this will be an expensive undertaking. And alas, I do not have an answer as to how the defence slice of the federal pie will be divided in order to make amphibiosity happen. Clearly, something will have to give. So apart from encouraging initiative and innovation (both, I submit, viewed through "purple"-tinted glasses) at every level, in the final analysis, we must trust in our Leadership and the words of *Oberstleutenant* Kurt Steiner, (in the film, "The Eagle Has Landed"): "Difficult decisions are the privilege of rank…" Decisions we await.

More on amphibiosity…

Major Ian Hunt, the Canadian Forces Liaison Officer to the United States Marine Corps writes…

I read Major Williams article and the following commentary by Sgt Majoor with great interest. As the Canadian Forces (CF) Liaison Officer to the USMC, I think I can speak with some authority on amphibious matters. Major Williams's article was well researched, but I agree with Sgt Majoor that it left me a bit unsatisfied. I think the concept of an amphibious power projection capability for the CF is the way ahead. Getting anyone else to buy into that idea will be the biggest problem. Having recently attended a conference on Sea Based Expeditionary Operations at the Maritime Warfare Centre in Halifax, I feel safe in stating that we are a long way from any type of amphibiosity strategy.

All of Sgt Majoor's comments are well founded and he has obviously put a great deal of research into them. However, I disagree with him in his understanding of how much we need to do to achieve the degree of amphibiosity we need. As part of a coalition force, and we will always be part of a coalition force, operating in the littorals it is most unlikely that we need to bring the full spectrum of combat power he mentions with us. The bigger more amphibiously minded powers, all of which are increasing their amphibious capabilities, can bring that part of the package and, in most predicted conflicts, heavy mechanized forces would not be what is required. What we can do is have a light force capable of moving by airlift and a medium force, at a high state of readiness, able to deploy by sea. I am not talking about brigades but battalion groups. In our current state anything bigger is wishful thinking. The two critical factors in this strategy are the CF's ability and determination to be able to project power and the Government's ability to decide at an appropriate time to deploy it. We will probably never achieve the latter but the former is, I believe, within the realms of the possible if all the three services can agree that it is a sound joint strategy. Wishful thinking but I believe the ground swell for a meaningful strategy will eventually get us there. Without it, we will be unable to contribute to world stability in the predicted conflicts of the next half-century.

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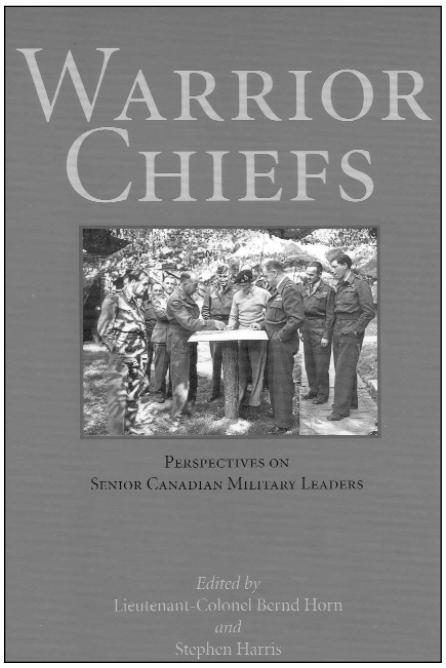

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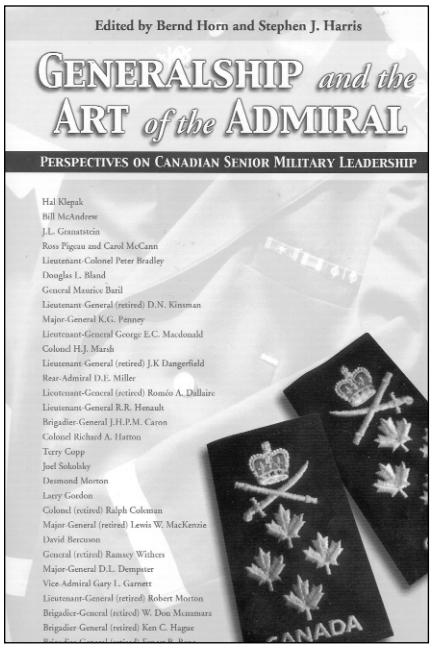

Generalship and the Art of the Admiral:
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