THE ARMY DOCTRINE & TRAINING BULLETIN

Canada's Professional Journal on Army Issues

National Defence   Défense nationale

THE ARMY DOCTRINE AND TRAINING BULLETIN

CANADA'S PROFESSIONAL JOURNAL ON ARMY ISSUES

The Army Doctrine and Training Bulletin is the Army house journal dedicated to the dissemination and discussion of doctrinal and training concepts and ideas by all members of the Army and those members of the civilian community with an interest in doctrinal and training matters. Articles on related subjects such as leadership, ethics, technology or military history may also be submitted. Considered, reasoned debate is central to the intellectual health of the Army and the production of valid doctrine and training policies. Articles designed to promote thought and discussion are therefore welcome. All ranks are encouraged to submit articles for consideration.

SUBMISSIONS

Articles of any length will be considered for publication, the ideal length being 2-5000 words. Contributions to the Stand-up Table should not be any longer than 1500 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* (Public Works and Government Services Canada, 1997), *Le guide du redacteur,* Translation Bureau (PWGSC, 1996), both are available via www.pwgsc.gc.ca/termium, libraries or bookstores; and *The Concise Oxford Dictionary* or the *Petit Robert*. Articles can be submitted electronically or by regular mail with a disc copy. Graphics and photographs must also be included. Endnotes or a bibliography are required. Contributors should include a brief biography citing their academic background, military employment, key courses and current position. All submissions are reviewed by an Editorial Board and contributors will be notified by the Managing Editor on the status of their submission. A Writer's Guide is availabe from the Managing Editor. The Managing Editor reserves the right to schedule articles and to select titles for published submissions.

DEADLINES

The deadlines dates for submission to each issue are:

Spring Issue: By 15 September
Summer Issue: By 15 December
Fall Issue: By 31 March
Winter Issue: By 30 June

DISTRIBUTION

The Bulletin is distributed to all Army headquarters, schools and units, and to selected NDHQ, Maritime Command, Air Command, CFRETS and DISO addresses. Copies are also provided to defence related organizations, allied armies,academia and selected members of the public on request. Individuals, organizations or units requiring copies are asked to contact the Managing Editor.

CORRESPONDENCE

EDITING AND LAYOUT

TABLE OF CONTENTS

THE ARMY DOCTRINE AND TRAINING BULLETIN WARFIGHTING ESSAY COMPETITION

$500.00, $300.00 and $200.00 will be awarded for the three best papers.

This competition is open to serving members of the Land Force. Essays should be persuasive discussions of tactics, doctrine, training, force structure, combat development, operations or other issues related to the Land Force.

Entry Rules. Essays must be original and not previously submitted nor published elsewhere. Maximum length is 4000 words. Submissions must include one double spaced printed copy and an IBM compatible disc copy. A *nom de guerre* will be substituted for the author's name on the title page. The author's actual name, contact information and a brief biography (academic background, key courses and employment, current position) will be provided in a sealed envelope with the *nom de guerre* clearly shown on the outside of the envelope.

All submissions will be reviewed by a panel consisting of five members, including the Commander LFDTS, the Commandant Canadian Land Force Command and Staff College, the Director of Army Doctrine, the Director of Army Training and an academic member of The Royal Military College of Canada. Winners will be announced in October 2000 and will be published in the Winter 2000/2001 issue of the Army Doctrine and Training Bulletin.

Essays must be postmarked on or before 31 August 2000.

For further information or to submit entries contact:

Captain John R. Grodzinski
Managing Editor
The Army Doctrine and Training Bulletin
P.O. Box 17000 Stn Forces
Kingston, ON K7K 7B4

Telephone: (613) 541-5010, local 4874
Fax: (613) 541-4478
E-mail: mail854g@dnd.ca

FORCE MOBILE COMMAND

THE EARLY YEARS

Captain John R. Grodzinski, CD

Choosing a date for the establishment of the Canadian Army is likely to be an impossible task. Do we make use of the date when the regular component was established in 1871[1] or following Confederation when a Canadian militia[2] was formed by amalgamating the militia forces of "Canada", Nova Scotia and New Brunswick under the Militia Act of 1868? Perhaps those of us starving for history should use the formation of the militia in Quebec 1660, as the formation date. Resolution of this question may never occur but we can be certain of one thing, the formation of the modern Canadian land force, with the creation of Mobile Command in 1965. The aim of this introductory essay of the *Bulletin* is to introduce readers to the early history of Force Mobile Command.

One of the most fundamental changes to Canadian defence policy and structure came in the 1964 *White Paper on Defence*. The most profound change came in the decision to integrate the armed forces under a single professional head of the armed forces, the Chief of the Defence Staff. It was hoped that supported by an integrated staff, effective and co-ordinated planning and conduct of operations would enhance operational capability, enhance military-civil co-operation and reduce defence expenditures.[3] This effectively meant that the three existing services, the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force, would be disbanded and a series of functional commands would replace all or part of their functions. Although the services were not disbanded until 1968, planning immediately commenced to prepare for the new defence structure. For the Army, this meant supporting the formation of Force Mobile Command (FMC). FMC was an integrated headquarters to whose responsibility would be to provide land and tactical air forces anywhere in the world. Mobility and flexibility were to form the key to this plan, largely through the provision of direct air support to the ground forces in the form of transport, ground attack and surveillance.[4] As such, the headquarters of the command would include army and air personnel.

The establishment of Mobile Command Headquarters involved the disbandment of four major headquarters[5] and their eleven subordinate headquarters. These headquarters were responsible for the 40 000 members of the regular Army, 40 000 militia personnel and over 100 000 army cadets. Planning for the new organization began on 30 June 1965, when the Planning Group, Mobile Command, was established under Lieutenant-General Jean V. Allard, the Commander designate. Members of the board included the Commander of the Army Tactics and Organization Board (ATOB), Major-General R. Rowley, the Deputy Commander (Designate) Mobile Command, Air Commodore F.S. Carpenter, two staff officers from ATOB, representative of Canadian Forces Headquarters and a secretary.[6]

Planning was initially undertaken in Ottawa and was to have moved to Car. The key role given to ATOB was planning and the new headquarters would be located outside of Montreal. The meetings were eventually moved to Petawawa (where ATOB was located) and Headquarters Quebec Command in Montreal. The Planning Group had many key issues to consider, from the integration of land and tactical air forces, to accommodation, trade structures and other considerations. Examination of a new uniform colour was even considered, with one member of the Board suggesting the new uniform be based upon mixing the colours of the previous three service; the proportion of the mix based upon the strength of each service at the time of integration.[7]

On 17 August 1965, the Commander Designate directed that the Headquarters Mobile Command would be located in No. 4 Personnel Depot, Jacques Cartier Barracks at Longueuil and that a pilot take over Camp Valcartier as a Mobile Command Base as soon as possible. By 20 September 1965 most of the elements of the Interim Headquarters, including ATOB, had moved to Longueuil and commenced preparing for the official opening on 19 October 1965. A Command Council was also established the day before the official opening.

Headquarters Mobile Command was officially authorised on 19 October 1965, and the first Routine Order included this entry:

ORDER OF THE DAY

NUMBER 1

1.   For the first time in Canadian military history, tactical land and air arms will serve under a single, integrated headquarters. This step is being taken to give greater effect to the execution of our mission to defence Canada and to maintain peace. You and I have been given the privilege of being pioneers in this task by being the first to serve in Headquarters Mobile Command.

2.   The comparison of our work to pioneers is most appropriate. We shall be called upon to work long hours and to develop new procedures; often departing from the familiar methods learned during previous, single-service experience. At the same time, we shall be strengthened by the proud histories of those who have gone before us in the Canadian Army and the Royal Canadian Air Force, in peace and war. Finally we shall hope to have the satisfaction of the pioneer who sees a rich harvest from newly turned ground.

3.   On this first day of our existence I wish you all success in the endeavour to make Mobile Command an efficient, effective organization by the earliest possible date.[8]

J.V. Allard
Lieutenant-General
Commander

The Headquarters was officially opened by The Right Honourable Georges P. Vanier, Governor General of Canada. It moved to the facilities formerly used by Air Defence Command at the Royal Canadian Air Force Station at St Hubert on 26 August 1966.[9]

In the first year of operation, the headquarters included 62 officers, 23 warrant officers and senior non-commissioned officers, 34 corporals and privates and five members of the Canadian Women's Army Corps.[10] The Commander was Lieutenant-General Allard, supported by two deputy commanders: Major-General Rowley as Deputy Commander Operations and Air Vice Marshal Carpenter as Deputy Commander Operational Support. The integrated nature of the headquarters is quite apparent. Of the 62 officers, 20 were former Royal Canadian Air Force officers and one a member of the Royal Canadian Navy. The air force personnel were not only responsible to the Chief of Tactical Aviation, but were also found in the operations, training, engineering, logistic and communications branches.

As mentioned, the take over of Camp Valcartier was taken on as a pilot programme for FMC bases. On 27 January 1966, it officially became an FMC base, followed by Camp Gagetown (28 January 1966), Rivers[11] (16 March 1966), Camp Petawawa (14 March 1966) and Calgary Garrison (17 March 1969).

The Chief of Tactical Aviation and staff were separated from the headquarters and grouped into Headquarters, 10 Tactical Air Group, which stood up on 15 August 1968.[12] At formation, the group commanded two operational training squadron, one tactical support and reconnaissance squadron, one tactical transport squadron and one heavy transport squadron.

In 1970 as part of the restructuring of Canadian Forces Headquarters, the functional chiefs (e.g. Director of Infantry) moved to Ottawa,[13] while Headquarters 10 Tactical Air Group was completely separated from FMC headquarters on 1 July. FMC also gained responsibility for regional operations (or domestic operations) within Quebec, the militia and the Combat Arms School (moved from Borden to Gagetown). Headquarters 4 Canadian Mechanized Brigade Group and its subordinate units were transferred to the newly created Canadian Forces Europe.[14]

A review of the historical reports from this period and indeed up to the 1990s show that FMC underwent almost continual reorganization, from its creation to when it was radically restructured in the early 1990s. The most intensive period of change occurred between 1965 and about 1974, in the midst of the complete reorganization of the Canadian Forces. After that, regular minor adjustment to the organization continued, largely in an effort to make the headquarters more responsive to field force and training requirements. What is certain is that the original intent to have an integrated land and air headquarters quickly disappeared, and effort shifted to making FMC more of a service organization comparable to the old Army, within the context of the unified Canadian Forces. Although we are still too close to view these events objectively, it is hoped that one day a detailed study of this period is undertaken. We may be surprised by what it concludes.

ENDNOTES

1 In his study on the Red River Rebellion of 1870, George F.G. Stanley argues that the first "regular' Canadian army units were formed in Manitoba in 1870.

2 The term "militia" is used to mean the entire army. Until November 1940, all land elements were known as the militia, divided into permanent or regular, and non-permanent or reserve elements. On 19 November 1940 based on the recommendation of the Chief of the General Staff, Lieutenant-General H.D.G. Crerar, an Order in Council was passed providing for these forces to be now referred to as "The Canadian Army".

3 Paul Hellyer and Lucien Cardin, *White Paper on Defence*, March 1964, (Ottawa: Queen's Printer and Controller of Stationary), p. 19.

4 Paul Hellyer and Lucien Cardin, p. 22.

5 The four major headquarters were Eastern Command, Quebec Command, Central Command and Western Command. They were roughly equivalent to the modern land force areas. The subordinate headquarters were the area headquarters (such as Eastern Ontario Area or Saskatchewan Area that were under the command headquarters). The responsibilities of the areas were to be split between newly established districts and Canadian Forces bases placed under Mobile Command.   See Annex M to FMC 1180-1 *Mobile Command Implementation Plan*, dated 24 November 1965.

6 Force Mobile Command Annual Historical Report 1965, Ottawa: Queen's Printer and Controller of Statipnary, p. 2.

7 Force Mobile Command Annual Historical Report 1965, p. 1.

8 Force Mobile Command Annual Historical Report 1965, p. 5.

9 Force Mobile Command Annual Historical Report 1966, p. 8.

10 Force Mobile Command Annual Historical Report 1965, Annex C.

11 Located in Manitoba, Rivers was home to the Canadian Joint Air Training Centre. FMC gained functional control of the Airborne, the other schools and command of the aviation squadrons there.

12 Force Mobile Command Annual Historical Report, 1968, Annex M.

13 A nucleus of expertise was maintained in the headquarters with the establishment of staff sections for armour, artillery, infantry and engineers. These later became the Senior Staff Officer (SSO) Armour, SSO Infantry, etc sections.

14 Force Mobile Command Annual Historical Report, 1970, various sections.

FROM THE MANAGING EDITOR

Captain John R. Grodzinski, CD

At an informal gathering last year, a candidate on the Land Force Command and Staff Course II questioned the necessity of having a university educated officer corps. What could this possibly offer to our warfighting skills? Why is yet another training requirement being imposed upon us? What practical value is gained by having a degree? Would it not be better to provide only a select (and gifted) few with this training and allow the rest to carry on? These people can then be buried in the appropriate directorate to deal with the army's problems.

This opinion is likely shared by many other officers and perhaps non-commissioned members (NCMs) as well. It reflects a discomfort with intellectual development that has plagued the army for generations. Yet, why are so many officers uncomfortable with the prospect of a university education? Certainly, only an arrogant fool would believe that a BA or BSc is the panacea to our problems. However, formal education is a good start. If we still believe in manoeuvring outside of the box (albeit this is now *passé*), then our personnel require some tools. A university education (at least at the undergraduate level) is not about gaining disciplinary expertise, although knowledge is a useful by-product. The real aim of such education is the development of thinking processes, the ability to think critically, analyse information and deliver reasoned written or articulated responses. No, this is not something learned on a staff tour or course at the Canadian Land Command and Staff College (CLFCSC) or other Canadian Forces institution. You have to go to school.

> *The nation that draws too great a distinction between its scholars and its warrior will have its thinking done by cowards and its fighting done by fools.*
>
> *—Unknown[1]*

"The Army…must ensure its leadership has advanced education, training and experience and the required skill sets…"[3]

It seems odd that with such an emphasis on education, our *educational* institutions, such as CLFCSC or the Canadian Forces Command and Staff College, do not foster the development of thought processes. Such development is only facilitated by university trained staff. Neither college has academics on staff and both make limited use of *select* academics for specific lectures. Contrast this with the Joint Services Command and Staff College in the United Kingdom. The Defence Studies Department has 28 academics on staff and is in the process of hiring 10 more. These individuals, prepare reading packages, lecture on their areas of expertise and lead syndicate discussion on policy, history and other subjects. As knowledgeable instructors, they can provide far more insight and instruction than military instructors, who may have valuable practical experience, but are unfamiliar with contenting schools of thought or the literature available on a given subject. Good academics can construct or deconstruct ideas, convincingly argue a position from any angle, and challenge traditional perceptions and notions of a given subject. Somehow, if we demand higher thought skills in our officers (and NCMs also), we must integrate academia into our command and staff colleges. Also, we cannot restrict ourselves to *select* academics (some of whom may have contributed to the negative view of academia many officers currently maintain); rather, they should be selected based on rigorous and equitable competition. Once selected, academics should be allowed to develop vibrant programs that continually challenge students and the paradigmatic thinking of some institutions.

To return to the questions voiced by the Land Force Command and Staff Course II candidate regarding the necessity of a university educated officer corps. Such questions arise from fear of change and are merely a veiled expression of the desire to maintain the status quo. Given the experience of the last few years, can we really afford to do so?

> *The Army needs well-educated, trained and innovative leaders capable of functioning in uncertain and dynamic environments.*
>
> *—The Future Security Environment[2]*

ENDNOTES

1 Quoted from United States Marine Corps MCDP 1-1 *Strategy*, 1997, p. 1.

2 Directorate of Land Strategic Concepts Report No. 99-2. *The Future Security Environment*, August 1999, p. 9.

3 Ibid, p. 23.

FROM THE DIRECTORATE OF ARMY DOCTRINE

AIR DEFENCE DOCTRINE

In September 1999 the new manual on Air Defence—B-GL-372-001 *Air Defence Artillery Doctrine*—was approved. *Air Defence Artillery Doctrine* is the keystone manual for Air Defence and builds upon the already published B-GL-300-007 *Firepower* manual. *Air Defence Artillery Doctrine* is available at the Army Electronic Library at the Land Force Doctrine and Training System (LFDTS) site (lfdts-6a.d-kgtn.dnd.ca/ael) of the Defence Information Network.

Modern warfare is three-dimensional, and the air battle is an integral part of the joint battle. Air Defence (AD) Artillery is the term for the Land Force contribution to joint counter-air operations. AD includes offensive and defensive actions to counter the air threat. The airspace of a theatre is as important a dimension for joint operations as the terrain itself. Airspace is used for critical purposes including manoeuvre, firepower, reconnaissance, surveillance, transportation and battle command. Effective control and use of airspace will decide the outcome of campaigns and battles. Commanders must consider airspace and the apportionment of air power in planning and supporting their operations. They must also expect the enemy to contest their use of the airspace and thus protect friendly forces from enemy observation and attack. AD operations contribute to gaining and maintaining the desired degree of air superiority and force protection. Synchronization of ground operations with air operations is synergistic and a fundamental element of successful campaigns. Air forces, through such missions as counter-air and close air support, directly support the land campaign. The Land Force contribution to the theatre campaign is diverse and requires a general-purpose combat capability. The destruction of enemy air assets by AD Artillery is an important component of the theatre defensive counter-air mission.

ROLE

The role of AD Artillery is to prevent the enemy from interfering from the air with our operations on the ground. This role encompasses many aspects, from protection of the force through passive measures to the protection afforded by the destruction of enemy air assets.

DEFINITIONS

AD Artillery. This includes all artillery weapons, both guns and missiles, which are designed primarily to destroy or neutralize enemy air vehicles, either to protect installations, designated areas and personnel, or to deny the enemy the use of airspace. It also includes equipment necessary for the effective employment of AD weapons, such as equipment provided for target acquisition, fire distribution and control, communications and mobility.

Categories of AD. Manoeuvre warfare requires the closest possible integration of AD systems. The overall AD design for battle must integrate coverage of various available weapon systems into a layered structure. Layers must overlap in range and height to allow more than one system to engage the enemy. This is achieved by a mix of aircraft and both static and mobile AD artillery systems. AD Artillery weapons fall into three categories: High/Medium AD (HIMAD), Short-Range AD (SHORAD) and Very Short Range AD (VSHORAD). Canada is currently equipped with SHORAD (ADATS/35 Gun) and VSHORAD (Javelin) systems. Organic Canadian HIMAD capability can only be provided by the air force (CF-18). The following diagram illustrates layered AD.

THE AIR THREAT

The threat is no longer just limited to attack aircraft and helicopters. Potential targets for AD Artillery have expanded due to technological advances and weapons proliferation to include missiles (both air and surface launched), unmanned aerial vehicles (UAV), cruise missiles and tactical ballistic missiles (TBMs).

JOINT AIR DEFENCE OPERATIONS

Joint operations are the integrated military activities of two or more service components of the CF. Joint operations pose a dilemma to the enemy. As the enemy attempts to avoid the efforts of one service component, it becomes vulnerable to attack by another. AD Artillery contributes unique capabilities for sustained operations as part of a joint or combined force. Combined operations involve military forces of two or more co-operating nations. To counter the spectrum of aerial threats, an integrated and coordinated defence must be the overall goal of all AD efforts. Air threats confronting the CF today and in the future are divided into those best addressed by manned aircraft and
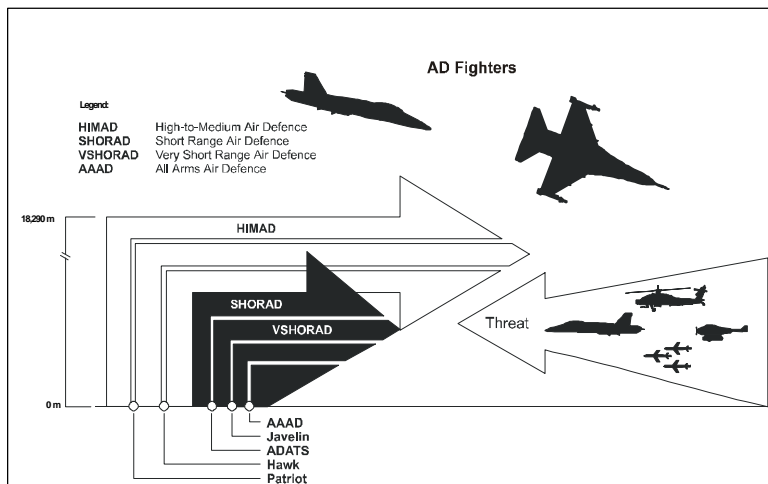
Figure 1: Layered Air Defence

those best countered by surface-based systems. As such, air and surface-based AD seek efficiencies by avoiding unnecessary duplication. AD Artillery concentrates on defeating enemy aerial vehicles operating in the very low to low-level height bands. These threats include UAVs, helicopters, cruise missiles and any fixed-wing aircraft that avoid destruction by joint and combined fighter aircraft. Synergy in the joint and combined arena results from sound doctrine, proper training and a common understanding of joint force relationships and procedures.

AD SYSTEM COMPONENTS

An effective AD system must detect, acquire, identify, intercept, and destroy or neutralize a target before its weapons are released.

A combination of counter-surveillance measures, emission control measures and ground and airborne sensors (the latter linked by effective communications to fighter aircraft and AD Artillery) provides the means of defeating the air threat.

The components of an AD system are:

+ **Weapon Systems**. This includes an integrated mix of fighter aircraft and AD Artillery systems.

+ **A Control and Reporting System (CRS)**. An AD command and control system is required to link all AD components and to provide the means to alert and control AD weapon systems.

+ **AD Sensors**. A number of complementary systems are required to carry out surveillance and control functions.

PRINCIPLES OF EMPLOYMENT/ DEPLOYMENT

There are four principles which commanders apply when planning AD Artillery operations to achieve optimum AD coverage: mass, mix, mobility and integration.

In order to be effective, AD Artillery is deployed in accordance with the principles of mutual support, all round defence, weighted coverage, early engagement and defence in depth. Which principles apply to a given situation will depend on the estimate of the situation.

Communications are vital for controlling AD fire and airspace. Enemy fire, electronic countermeasures, electromagnetic pulse, environmental factors or equipment failure may disrupt communications. Electronic Warfare (EW) can affect command and control communications, reconnaissance, surveillance and weapons guidance. Target acquisition, which is part of Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR), is a critical aspect of AD. Without timely, accurate early warning and target acquisition of airborne targets, AD Artillery cannot provide the maximum level of protection.

COMMAND AND CONTROL

Command of AD Artillery is normally retained at formation level to permit coordinated coverage and optimum use of AD Artillery weapons. AD unit command and control remains with the AD artillery commander. The commanding officer of an AD regiment normally uses tactical tasks to identify the priority of effort and to establish liaison requirements between AD batteries and supported elements/units.

Control of AD Artillery is, however, normally retained at the highest level. In an allied or coalition environment, the theatre commander assigns responsibility for overall AD and airspace control to a single Joint Force Air Component Commander (JFACC). This may be any commander but is normally the Air Component Commander (ACC), who is both the AD Commander and the Airspace Control Authority (ACA). The AD Commander coordinates and integrates the entire AD effort within the theatre. He may create AD regions and appoint a Regional Air Commander (RAC) for each.[1] The RAC is normally also the Regional AD Commander (RADC), but this position may be selected from any service component. The RADC has full responsibility and authority for AD of the region.

SUBORDINATE LEVELS OF COMMAND

At each level of command, representatives of primary airspace users work together in a number of cells. These cells may include the following:

✦ **Combined Air Operations Centre (CAOC)**. The CAOC acts on behalf of the JFACC as the regional air-tasking agency.

✦ **Surface to Air Missile Operations Centre (SAMOC)**. HIMAD units are controlled by the SAMOC and are likely to be placed TACON to the Commander CAOC. Their deployment will always be coordinated within the integrated regional AD system.

✦ **Air Operations Coordination Centre (AOCC)**. Each corps has its own AOCC, which is responsible for coordinating all air support for the corps. The AOCC is also responsible for overall coordination of AD operations and Airspace Control Measures (ACM) in accordance with the theatre AD plan.

✦ **Air Defence Cells**. An AD Cell (ADC) is established at brigade (BADC) and higher headquarters (DADC/CADC). The AD Artillery commander, supported by staff, operates from the ADC and acts as arms advisor to the commander. The ADC provides planning and AD input to the Airspace Coordination Centre (ASCC).

The AD Commander establishes AD engagement operational procedures. These measures will detail the level at which positive management of the air battle is to be conducted. Such measures will include AD warnings, States of Readiness, Rules of Engagement and Weapon Control Status.

The key issue in command and control of AD is airspace control. The objective of airspace control is to maximize operational effectiveness by allowing land, air and maritime forces to operate in an efficient, integrated and flexible manner. Mutual interference must be minimized, and friendly forces must not be unduly restrained or put at risk. The purpose of airspace control is to balance two conflicting requirements: optimizing AD protection while providing friendly air assets freedom to operate with minimum restriction. Minimizing the danger to friendly air assets risks permitting hostile air assets to approach, without being engaged, in order to destroy assets vital to the success of the Joint/Combined Force Commander's mission. Conversely, achieving a very high probability of engaging all hostile aircraft may put friendly air assets at risk. The Joint Force Commander (JFC) must decide what balance of risk is acceptable. Airspace control applies to all airspace users and AD weapons that are capable of engaging within that airspace. To achieve the most benefit from all airspace users, an Airspace Control System (ASC) is utilized. The ASC is a procedural system designed to provide the following:

✦ minimum risk to friendly aircraft;

✦ minimum restrictions on AD weapons;

✦ separation of air and land operations in the airspace; and

✦ operability in a hostile electronic environment under conditions of electronic silence.

CONCLUSION

B-GL-372-001 *Air Defence Artillery Doctrine* provides the full explanation of the concepts outlined in this article. This manual will be followed, later this year, by an operational procedures manual that will concentrate on how Canadian AD artillery implements the doctrine and principles expressed in AD Doctrine.

Air Defence Doctrine

FROM THE DIRECTORATE OF ARMY DOCTRINE

FIELD ARTILLERY DOCTRINE

B-GL-300-007 *Firepower*, which was introduced recently, addressed Firepower doctrine and set the stage for developing Field Artillery doctrine. B-GL-371-001 *Field Artillery Doctrine* outlines tactical doctrine for the employment of field artillery in battle, including the role of the field artillery and its employment in all operations of war.

Many new ideas and concepts are introduced in this manual. A description of recently adopted command relationships and their affect on the artillery is included. Another new concept concerns the functions of an artillery commander—to interpret, influence and integrate - which are described in Chapter 3. Furthermore, the publication outlines the employment of fire support within the battlefield framework, for different types of operations and transitional phases.

Firepower, integrated with manoeuvre or independent of it, is used to destroy, neutralize, suppress and harass the enemy. To achieve its maximum effect firepower requires the full integration of army and joint service systems and procedures for determining engagement priorities; locating, identifying, and tracking targets; allocating firepower assets; and assessing battle damage. Thus, firepower is a joint concept, including conventional land, air and maritime weapon effects. To attack air, ground and sea targets, firepower encompasses the collective and coordinated use of target acquisition data from all sources, direct and indirect fire weapons, attack aircraft and helicopters of all types, and other lethal and non-lethal means.

As a subset of firepower, fire support is the collective and coordinated use of land and naval indirect fire systems, attack aircraft and helicopters, offensive Intelligence Operations (Int Ops), and non-lethal munitions against ground targets. This collective, coordinated effort supports land combat operations at both the operational and tactical levels. Fire support involves the integration and synchronization of fire and effects to delay, disrupt, or destroy enemy forces, combat functions, and facilities in pursuit of operational and tactical objectives. It includes field artillery, mortars, naval fire, and air-delivered weapons. The force commander employs these means both to support his manoeuvre plan and to engage enemy forces in depth. Fire support planning and coordination are essential at all echelons of command. Field artillery is a major component of the fire support available to a division. Additional field artillery assets from corps may be assigned to the division depending on the tactical situation and the commander's intent.

ROLE OF THE FIELD ARTILLERY

The role of the field artillery is to assist in defeating the enemy with indirect fire as part of the all arms battle. The field artillery consists of gun, rocket and missile units which provide surface-to-surface fire support for the field force. It also includes field locating artillery and equipment, which provide target acquisition, combat surveillance, and artillery intelligence.

Fire support plays a major role in the Canadian army's approach to manoeuvre warfare described in B-GL-300-001 *Conduct of Land Operations—Operational Level Doctrine for the Canadian Army*. Our warfighting philosophy seeks to defeat the enemy by shattering his moral and physical cohesion, that is his ability to fight as an effective, coordinated whole, rather than destroying him piecemeal by incremental attrition.

Fire support is one of the keys to breaking the enemy's cohesion. It destroys, neutralizes and suppresses. It allows movement to take place, enabling friendly forces to manoeuvre into more advantageous positions relative to the enemy. One of the most flexible means of applying fire support on the battlefield is by the use of field artillery.

Field artillery assists in fixing and striking the enemy.[1] The field artillery supports forces fixing the enemy by stripping away critical enemy resources and restricting enemy freedom of movement. Field artillery also strikes the enemy throughout his depth, attacking his morale, and disrupting and destroying manoeuvre formations; command, control, communications and intelligence assets; and logistics.

ARTILLERY COMMANDERS

Artillery commanders have three functions: to interpret, to influence and to integrate.

- **Interpret**. Artillery commanders must assimilate the information they receive and fully understand the manoeuvre commander's mission. In addition, they must comprehend the intent and concept of operations of

both their superior commander and the commander two levels up. This implies that the artillery commander understands operational and tactical level doctrine.

* **Influence**. The artillery commander must then use his knowledge of artillery, fire support and tactics to advise the commander and develop the fire support necessary for the commander's plan.

* **Integrate**. Finally, the artillery commander must integrate the fire support plan into the manoeuvre commander's plan. It is essential that these plans are developed simultaneously to ensure their compatibility and to maximize the application of combat power.

Field artillery commanders strive to realize the battlefield potential of the fire support system by concentrating available fire support assets, at the time and place required, in such strength as to exert a decisive influence on operations. As one of the most powerful and flexible components on the battlefield, field artillery is capable of delivering massive weights of fire throughout the area of influence. In order to achieve this effect, however, the principles of concentration of force, coordination, flexibility and economy of effort must be observed.

COMMAND AND CONTROL

The range of modern artillery is such that fire support from an artillery organization may be provided to more than one unit or formation, both in national and combined operations. Therefore, the positioning of artillery systems, including surveillance and target acquisition (STA) assets, and the concentration of fire to achieve the best results during rapidly changing tactical situations, demands an efficient and flexible system of command and control. The senior artillery commander must be able to influence the siting of artillery and STA systems within the formation so that the fire of as many artillery resources as possible can be concentrated on the most important targets. The artillery commander must rapidly allocate the fire of artillery units to those targets most likely to affect the manoeuvre commander's plan. Thus, command of artillery assets is exercised at the highest level, while the control or application of artillery fire is done at the lowest level.

At corps and above, command relationships[2] are used to assign resources to lower formations. Within divisions, the control of artillery is achieved by assigning tactical tasks. These tasks define the relationship between fire support assets and the supported arm, and the degree of guarantee attached to the provision of that support. Tactical tasks, in order from those most responsive to the supported arm to the most centralized, are as follows: Direct Support (DS), Reinforcing (R), General Support Reinforcing (GSR), and General Support (GS).

At the brigade level the control of fire is accomplished through assigning

Tactical Task of	Answers Calls for Fire in Priority from	Establishes Liaison with	Establishes Communication with	Furnishes Artillery Tactical Groups	Assets Moved and Deployed by	Has as its Zone of Fire (3)(4)	Has its Fire Planned by
Direct Support (DS)	1. Directly supported formation/unit. 2. Own Bty Tac Group 3. Force field artillery HQ[(1)]	Directly supported formation/unit	The directly supported manoeuvre formation/unit	BC to unit HQ. FOO party to each manoeuvre sub-unit of the directly supported formation's units	Direct support artillery unit commander	Zone of action of the directly supported formation/unit	Develops own fire plans in coordination with directly supported formation/unit
Reinforcing (R)	1. Reinforced artillery unit 2. Own Bty Tac Groups 3. Force field artillery HQ[(1)]	Reinforced artillery unit	Reinforced artillery unit	No inherent requirement	Reinforced artillery unit	Zone of fire of reinforced artillery unit	Reinforced artillery unit
General Support Reinforcing (GSR)	1. Force field artillery HQ[(1)] 2. Reinforced artillery unit 3. Own Bty Tac Groups	Reinforced artillery unit	Reinforced artillery unit	No inherent requirement	Force field artillery HQ[(1)]	Zone of action of the supported formation/	Force field artillery HQ[(1)]
General Support (GS)	1. Force field artillery HQ[(1)] and target acquisition artillery 2. Own Bty Tac Groups	No inherent requirement	No inherent requirement	No inherent requirement	Force field artillery HQ[(1)]	Zone of action of the supported formation	Force field artillery HQ[(1)]

Notes: Any modification(s) to any of the above conditions will result in a "non standard task"

1. Force Artillery Headquarters or Higher Artillery Headquarters.

2. G3 staff must be consulted before gun groups are moved within, into or across their brigade boundaries. The DS artillery CO is responsible for this coordination.

3. Zone of Action – A tactical subdivision of a larger area, the responsibility of which is assigned to a tactical unit (AAP-6).

4. Zone of Fire – An area which covers and may extend beyond the supported formation/unit's zone of action.

Figure 1: Artillery Tactical Tasks

priorities of fire. Priority of fire specifies who receives supporting fire when conflicts arise. The artillery unit commanding officer assigns priorities of fire at the beginning of an operation according to the brigade commander's concept of operations. Priorities of fire may change during the course of an operation to conform to changing situations and therefore adjustments to the commander's concept.

FIRE SUPPORT COORDINATION

A supported formation or unit will have many different sources of fire support. These resources must be employed so that each is used to the best advantage, in the most effective and efficient manner, such that all conflicting demands are resolved. This requires careful coordination of all fire support resources.

To effect the required coordination, the artillery commander establishes a Fire Support Coordination Centre (FSCC) within the operations centre of the supported unit or formation headquarters. The FSCC consists of one common operations centre, with representatives and communications from all available fire support agencies and the Air Space Coordination Centre (ASCC). The artillery commander is responsible for the operation of the FSCC.

The FSCC carries out the following functions:

✦ **Advice**. It provides advice to the supported commander and staff on the capabilities and use of all indirect fire support.

✦ **Coordination**. The FSCC plans and coordinates all fire support available to the formation or unit, coordinates fire support with adjacent units/ formations; and coordinates air defence (AD) airspace control measures through the ASCC.

✦ **Allotment of Resources**. The FSCC allots and prioritizes fire support resources to support the commander's plan. This includes the processing of fire support requirements external to the supported formation.

One of the more important activities within the FSCC is fire support planning, which is the continual process of analysing, allocating, and scheduling fire support. Fire support planning is an integral part of the commander's battle procedure. The aim of fire support planning is to integrate fire support effectively into battle plans in order to optimize combat power. To accomplish this aim, fire support planning is done concurrently with battle procedure at all levels for deep, close and rear operations. Fire support planning must be flexible to accommodate unexpected combat developments and to facilitate rapid change. It encompasses positioning, allocation of resources, resupply, target acquisition and target engagement. It involves synchronizing all available fire support resources to focus artillery fire where the manoeuvre commander intends to fight the battle.

Fire planning and targeting are two separate but complementary processes within fire support planning. Targeting is a formal staff process comprised of a series of activities and outcomes inherent in the operational planning process. Targeting is a continuous and cyclical activity, which facilitates the identification and engagement of priority targets. It assists the commander in deciding what enemy resources or assets to attack, how to acquire these targets, and how to attack them.

Fire planning is more than just planning where the guns are going to fire. It involves the collective and coordinated use of indirect fire, attack aircraft and helicopters, and other lethal and non-lethal means in support of the manoeuvre commander's battle plan, integrated with the barrier and Intelligence, Surveillance, Target Acquisition, Reconnaissance (ISTAR) plans. Fire planning is often joint in nature and is carried out in all operations of war. The key aspect of fire planning is the coordination and synchronization of all available fire support assets to support the manoeuvre commander's tactical plan. Artillery commanders at various levels are responsible for this coordination.

Fire Support Coordination Measures. The basic framework for fire support coordination is established through the use of coordination measures. The aim of fire support coordination measures (FSCM) is to increase the speed of response to calls for fire while reducing fratricide. These measures can be either permissive or restrictive. The FSCC coordinates all fire support impacting in the area of responsibility of the supported force, ensuring that fire support will not jeopardize troop safety, is synchronized with other fire support means, and will not disrupt the operations of adjacent friendly units.

BATTLEFIELD FRAMEWORK

The concept of deep, close and rear operations provides a means of visualizing the relationship of friendly forces to one another, and to the enemy, in terms of time, space, resources and purpose. Formations and units conduct deep, close and rear operations at different stages of the battle. Artillery is unique in the sense that it is the only arm within a formation that will regularly be involved in all three operations simultaneously. Deep and close operations should be conducted concurrently not only because each influences the other, but also because the enemy is best defeated by fighting him throughout his depth. Coverage of the entire formation area must be considered therefore in deploying fire support assets. The concept of deep, close and rear operations facilitates the command and coordination of operations.

Deep operations can degrade the enemy's firepower, disrupt his command and control, destroy his logistic base and break his morale, and thus his cohesion. While fire support plays an essential role in the conduct of deep operations, the integrated application of firepower and manoeuvre make a deep attack capability effective. Success is founded on synchronizing all assets at all echelons. Terms such as limit, disrupt, delay, divert, and destroy are used to describe the objectives and effects of an attack on enemy capabilities. The terms are not mutually exclusive. Actions associated with one objective may also support other objectives. These terms are defined as follows:

+ **Limit**. Limiting enemy capabilities reduces the options or courses of action available to the enemy commander. For example, the commander may employ air interdiction and fire support to limit the use of one or more enemy avenues of approach. Also, interdiction may be used to limit the ability of enemy fire support to interfere with friendly operations.

+ **Disrupt**. Disruption denies the enemy the efficient interaction of his combat and combat support systems. It forces the enemy into ineffective tactical dispositions and degrades the movement of material and forces.

+ **Delay**. This objective alters the time of arrival of forces at a point on the battlefield or the ability of the enemy to project combat power from a point on the battlefield. In interdiction doctrine, delay results from disrupting, diverting, or destroying enemy capabilities or targets.

+ **Divert**. This addresses the commander's desire to tie up critical enemy resources. Attacking

certain targets may result in the enemy commander diverting capabilities or assets from one area or activity to another. The diversion of these resources indirectly reduces the enemy commander's capability to continue pursuing his plans.

+ **Destroy**. As an objective, this action calls for effectively eliminating the personnel, material and/or capability of a target essential to the enemy.

The commander's battle plan for deep operations requires several special considerations. Manoeuvre forces may be required to exploit the result of large-scale, conventional fire support or to set the conditions for deep attacks. Fire support is the most responsive asset that the operational-level commander has to shape enemy operations. The ISTAR plan must include tasks supporting deep operations. Locating efforts will also be directed towards deep operations. Successful deep operations require careful analysis of enemy capabilities and vulnerabilities. Only enemy targets that pose a significant threat to friendly forces or which are essential for accomplishing critical enemy tasks are potential targets for engagement. Examples of such targets include: command and control facilities, fire support, air defence systems, ISTAR assets, weapons of mass destruction, and logistic installations.

Close operations include battles and engagements of manoeuvre and fire support units which, together with their combat support and combat service support, seek a decision with the enemy. Close support fire is directed against targets or objectives that are sufficiently near the supported force, and thus require detailed integration or coordination of supporting fire with the fire,

movement, or other actions of the supported force.

Rear operations assist in providing freedom of action and continuity of operations, logistics and command. Their primary purpose is to sustain current close and deep operations and to posture the force for future operations. Commanders must focus their efforts on protecting their most critical capabilities. An artillery representative will be designated by the artillery commander to advise, plan and coordinate rear area fire support. The effects of fire support are the same as outlined under close operations.

CONCLUSION

Field Artillery as a major component of the fire support system has a large role to play on the modern battlefield, especially given our manoeuvre warfare approach to warfighting. The artillery commander is responsible for providing advice on the fire support plan and for integrating fire support into an operation. The fire support system attacks the enemy's cohesion and assists the manoeuvre commander in fixing and striking the enemy.

ENDNOTES

1 As outlined in B-GL-300-001 *Conduct of Land Operations—Operational Level Doctrine for the Canadian Army*, attacking 'the enemy's cohesion is executed through a combination of the two dynamic forces of fixing and striking. Implicit in both is the need to find.' P. 2-5

2 Operational Command and Operational Control are the command relationships most often associated with the field artillery.

FROM THE DIRECTORATE OF ARMY TRAINING

REDEFINING ARMY TRAINING

Of all the subjects one could choose to address in this journal, training philosophy is clearly among the most contentious. We have all been 'victims' of the training system and most of us have been, at some stage, cast in the role of trainer. Consequently, we hold strong opinions about training, whether we are entitled to them or not. As instructors in the schoolhouse, as key leaders in the unit, or as managers in the system, training comprises a large percentage of our professional lives. We tend to take any criticism of our training system personally and so we should. The Canadian Army has long held the enviable reputation of having the best individual training system in the NATO alliance. Even if our collective training has eroded noticeably, our soldiers and leaders have been consistently praised for both the high quality and wide range of their skills. Regrettably, the resource constraints of the last decade have taken their toll on our utopia.

In the current context our training system might, at best, be charitably described as 'sub-optimal,' yet there are those who continue to deny any dysfunction. Their argument proceeds from the assertion that Canadian soldiers continue to do well in their assigned tasks, no matter the environment, and that their skills are in demand wherever disaster strikes. It is a strong argument and in the context of our immediate history, undeniable. Canadian soldiers have excelled in peace support operations over the last decade. Although there have also been some failures clearly linked to training and leadership deficiencies, notably Somalia and Bacovice. This article is intended to demonstrate that our current training system is untenable. The focus on peace support operations is having a drastic effect on our ability to train and generate multi-purpose combat capable forces. It will establish the causes of dysfunction and offer for debate a set of principles on which to found a renewed Army Training System.

THE PROBLEM

Our Defence Planning Guidance (DPG) mission is to generate and maintain combat capable multi-purpose land forces[1] to meet Canada's defence objectives. Within the Operational Spectrum Model this demands the capability to fight and win View 1 conflicts, either as members of NATO or as a coalition task force, while also being able to prosecute Peace Support Operations in View 2. This hybrid we describe as 'multi-purpose combat capability'. That is, the force is structured, trained, and equipped for war fighting; however, it can be employed in peace support operations by adding Theatre and Mission Specific Training (TMST) elements that adapt its war fighting skills to the conflict intervention role.

As the model depicts View 2 conflicts are more likely, and indeed constitute our recent operational experience almost exclusively. It must be remembered, that the credibility of a peacekeeping force is a direct product of the combat capability it can demonstrate to the belligerents involved. 'Soft power' is a debatable diplomatic notion not applicable at the tactical level where agreements are enforced through the perceived threat of 'combat power'. Consequently one would expect battle groups to train for and achieve high competency levels in all battle task standards (BTS) regularly, adding only the TMST elements they require prior to commitment to View 2 operations. Regrettably, however, this is far from the case.

THE LEVELS OF TRAINING[2]

Using the BTS correctly, following the progression shown in the Levels of Training above, a minimum of 96 days collective training are required to reach level 7 (Battle Group) competency. Level 8 (Brigade), as demanded by the DPG, requires an additional 28 days for a total of 124. An examination of level 2 business plans reveals that units average less than 21 days collective training annually in the years they are not committed to operations. also large portions of the 90 day pre-deployment training period are committed to individual training and TMST. Post exercise reports confirm that in the opinion of field commanders, both time and resource constraints are degrading combat capability, and that certain operations of war are rarely practised. A survey of pre-deployment training plans shows that while some high quality war fighter training is conducted as a prelude to operations, it rarely exceeds Level 6 (combat team) and that the primary focus is on TMST. In the face of these facts, it is patently dishonest to claim that the training system is producing effective, combat ready war fighters and units, ready to fulfil our DPG tasks in both View 1 and View 2 operations. It simply is not.

While we do continue to produce soldiers, units and, to some extent,

leaders who can conduct Peace Support Operations, our combat capability is probably not greater than Level 6. This is by no means damning of those in the field force; given the resources there is no doubt that they would make amends is very short order. Nor is it a condemnation of the Land Staff who, in the face of severe resource constraints, are frequently forced to make hard decisions. It is simply a catalogue of the facts as they exist offered as a gauntlet to anyone who thinks there is 'no problem'.

THE ANATOMY OF DYSFUNCTION

We cannot begin to treat our illness if we do not understand the mechanisms that have produced this malaise. The 'problem' is not solely resource based, as one could easily conclude from the previous paragraphs. Rather, it is predominantly cultural in origin, that is, corporate or command culture. As an example we will consider resource allocation which is widely accepted as the prime indicator of priority, and as it is within the discretionary portions of the budget, the Army has autonomy in this respect. If training to gain and maintain operational effectiveness is our highest priority, it stands to reason that it would be adequately resourced. Conversely, we must accept that if resource allocations to training are insufficient, as is presently the case[3], then we clearly do not think it a high priority. The indictment must therefore point to a command culture that subordinates training for war to other demands. This is not the work of one agent, such a thing could not be accomplished in isolation. Rather, it has become ingrained in our collective psyche, and speaks to the gradual bureaucratisation of our command culture, and its structures.

It seems that in many ways we have sacrificed effectiveness on the altar of efficiency. In the countless strategic planning meetings we utter the latest operational buzzwords, however, our resource decisions satisfy bureaucratic rather than operational imperatives. The crucial operational training document that was known as the Army Training Plan is now a meagre table of resource allocations buried in the voluminous Strategic Operation and Resource Direction (SORD). The impression is thereby given that training is fully 'integrated' and 'synchronised' with all facets of the Army operational concept. In essence we have talked ourselves into believing our own myths, even though the evidence, should we care to examine it carefully, would lead us to conclude otherwise. We, as a culture, have fallen into the 'Smart Talk Trap', as well documented by Pfeffer and Sutton; a précis of which can be found in the Harvard Business Review (May-June 1999).[4] The documents look very professional, the presenters use business planning jargon, and the accountants can demonstrate a measure of resource accountability. But does the Army train for war effectively?

The two most visible symptoms of dysfunction, are measurable declines in training effectiveness and eroding moral health. Training effectiveness, as discussed earlier, refers to the outcome of the training process that must always satisfy the litmus test of the DPG, that is, can the units of the Canadian Army fight and win in the mid-intensity battle space? If the answer is no, as indicated, then training, amongst other things, is not effective.

Moral health is a subtler dimension. It deals largely with perception: the perception held by soldiers and leaders about our ability to fight and win; the perception the public holds of the Army and its culture; and most importantly, the perception we hold of our credibility as a force. Although somewhat intangible, these perceptions are very powerful. In a morally healthy Army each individual invests him or herself fully in both the explicit and the implicit goals of that Army. These goals become internalized and soldiers become confident in their leaders, their doctrine, their equipment and their training. It is safe to say these conditions do not prevail and the more our soldiers and junior leaders observe and experience
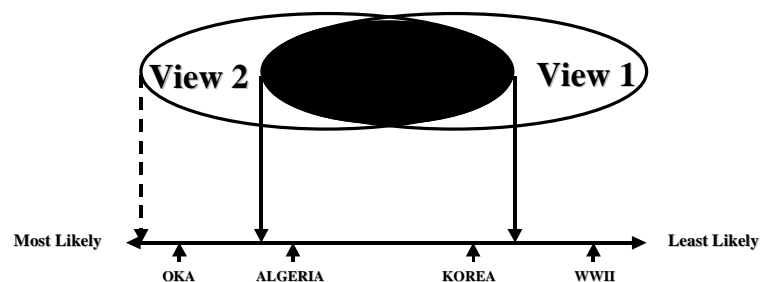

Figure 1: The Operational Spectrum

the training system, the less it makes sense to them.

The simple Venn diagram[5] (Figure 2) describes the three principal causes that directly impair training effectiveness and degrade moral health. For any system to function coherently its constituent parts must possess unity of thought, purpose and action. Without unity there can be no common purpose. Our training system has devolved into a decentralised, business management type model where disunity has led to a lack of coherence in command and control, divergent and often conflicting approaches to doctrine and training, and regionally based management approaches that drastically impair efficiency. A classic example is the disparity between the four different junior leadership course TS/TPs in use at the four Area Training Centres. Collective training 'campaign seasons' have become desynchronised from the individual training peak demand period and as a result our planning capability is 12 months at best, and the simple co-ordination of such issues as instructor augmentation requirements consume inordinate staff energy. Unity of purpose and action could be achieved through an Army wide synchronised training and operational planning cycle, however attempts to implement one have yet to yield results.

Secondly, our training system is overloaded; it is running beyond capacity, and it is not sustainable. This capacity problem is due to the significant re-assignment of individual trainers to the field force during 1994/95, which removed much of our flexibility. Consequently, we re-assign two brigade group's worth of key leaders/trainers, (754 Master-Corporals to Captains to the Combat Training Centre alone, plus an unknown number to Area Training Centres) from the field force to the training system annually to meet a burgeoning individual training demand. This friction is in addition to the high operational tempo and increasing individual training and education demands on the trainers themselves. The net effect is that time away from overseas deployment is no longer 'shore time.' Rather, it has become time for tasking as a trainer or commitment as a trainee, as rising divorce and release rates attest.

Turmoil in the system is increasing. Attempts to address the symptoms often induce greater change and uncertainty. The result is less ability to plan and greater load on the staffs and trainers. They look around them at what should be a well-ordered, well disciplined environment, but what they see seems neither rational nor coherent. Thus credibility is eroded; people stop investing themselves fully, moral health declines, and training becomes less and less effective.

Clearly whatever action we take to address the decline in moral health and training effectiveness, it must transcend the 'knowing-doing' gap that Pfeffer and Sutton describe. We know how to fix it, we tell ourselves we are fixing it, yet it remains broken at the 'sharp' end. Credibility can only be restored through real action that connects the strategic goals in the Land Force Strategic Direction and Guidance (LFSDG) with rational direction and change leadership at the tactical level. In short, if a change does not improve things tangibly then it will have no credibility with soldiers and leaders, and it is in this situation that we now find ourselves.

THE FUNDAMENTALS OF TRAINING

A new paradigm for training needs wide acceptance of the philosophical premise upon which it is to be based if change is to be lasting. Consequently the following fundamentals of training are offered in the hope that the ensuing debate will forge such a consensus:

Train as We Intend to Fight. This is the prime directive of training. It is as much a state of mind as it is a guide to action. In practical terms it implies that all training is to incorporate the highest degree of fidelity possible, and that no aspect of operations is to be "notionalized" if a means to simulate it is available. The responsibility for this rests with the Exercise Director/Chief Evaluator, as defined in Field Training Regulations (FTR) Chapter Two. In the wider sense it speaks to such issues as the mandated use of BTS, a command
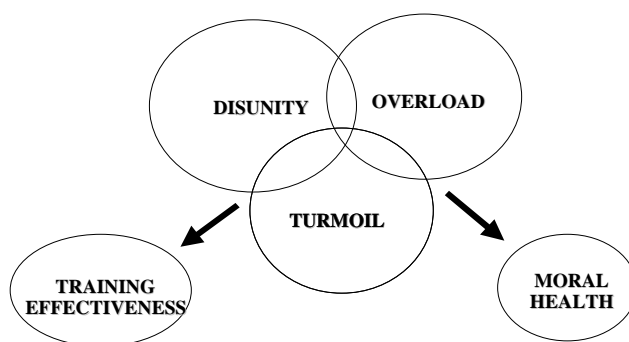
Figure 2: Three Causes of Impaired Training Effectiveness and Degraded Moral Health

culture that embraces training confirmation, and resource decisions that reflect the primacy of operational training.

Train to Standards. The aim of all collective training events should be the successful achievement of one or a number of BTS in the same way that individual training events are designed to successfully achieve the course Training Standard. Accordingly, all exercise instructions should define which BTS are being exercised, precisely describe the expected training outcome, and define how success will be measured. Any training which does not address a BTS does not emerge from a DPG task, and should therefore be closely scrutinised.

Train to Need. This simply means that we conduct the right training at the right time for the right audience in the most efficient manner practicable. As stated all Army training, collective, individual and continuation must answer a training need derived from a DPG task. All individual training must answer a specific qualification requirement, either leadership, specialist skill, or mandated programme. Occupational Specialty (OSS) training should not be conducted unless a lack of trained personnel (including authorized redundancies) has been forecast in the Unit Qualification List (UQL). Training members to perform the Occupational Specification (OS) and OSS functions of another Military Occupation (MOC) is extremely resource intensive. It erodes the original MOC skill set (requiring further resources to re-establish them) and offers little opportunity for skill maintenance after initial use. This practice is highly wasteful and seriously violates the "train to need" principle.

Systems Approach. The Army Systems Approach to Training (ASAT) defines the developmental and quantity control processes for both individual and collective training. Individual training development and collective training event design will both adhere to the ASAT quality control model, while the quantity of training conducted will be dictated by the quantity control model.

Training Progression. The Levels of Training at Table one represent the established hierarchy. Progression from one level to the next should not occur until formal evaluation confirms competency in the current level. Such evaluations are referred to as 'gateways' and represent prerequisites to progression.

One Operational Standard. Standards for collective training (BTS) evolve through the analysis of the appropriate doctrine publications and are kept current through the Army Lessons Learned process. Individual training standards are found in the applicable TS for the qualification, while continuation-training standards reside in the branch/corps special to arms publications. Given that a potential enemy will not grant quarter on the battlefield based on whether a soldier is Combat Arms or CSS, a regular or a reservist, the Army must have One Operational Standard to be achieved prior to deployment. That Standard is defined as the Deployment Level of Capability and is the same for every component branch and corps, as described in the applicable BTS. Units cannot be expected to maintain the same level of competency in all tasks while at low readiness states (more than 120 days NTM), therefore the Minimum Level of Capability (MLOC) is prescribed. In Reserve Units where readiness states are 181 to 365 days, soldiers and leaders will perform fewer tasks to lower competency level than his/her regular counterpart. The guiding tenet however is that all units and personnel committed to operations will demonstrate DLOC prior to deployment.

All Training Must be Confirmed. The aim of confirmation is to establish the real competency level of the group

LEVEL	DESCRIPTION
(a)	(b)
1	Individual Battle Tasks (IBT)
2	Section, Crew & Detachment Battle Drills
3	Sub-Sub Unit (Troop/Platoon)
4	Sub-Unit (Coy, Sqn, Bty)
5	Unit (Regimental)
6	Combined Arms Sub-Unit (Combat Team)
7	Combined Arms Unit Training
8	Formation Level Training

Table 1: Levels of Training

being exercised so that leaders can focus their efforts on areas for improvement, while building on their demonstrated strengths. Training that is not confirmed has no feedback function, and therefore cannot fulfil its role. This does not negate the requirement for practice in order to establish techniques and Standing Operations Procedures (SOP); however, even this process should involve informal confirmation and feedback. It is acknowledged that a confirmation methodology and policy is required before this can be undertaken and DAT is developing one now.

Confirm Two-Down. The principle of confirmation 'two down' should be observed. Leaders train their subordinates and have a vested interest in their success. Thus, they cannot render an unbiased confirmation. Training plans should be briefed two up, and the commander to whom the plan was briefed should conduct the confirmation at the gateway. In this way we recognize that success or failure are as much a product of a healthy 'command climate' as they are of effective training technique. Under no circumstances should leaders at any level confirm their own training.

Resources Follow Tasks. Part Three of LFSDG is the Strategic Operations and Resource Direction (SORD). It contains the Army Training and Task Table which sets the assigned training level for each DPG task. Each task has an assigned set of BTS to be achieved, and should allocate the resources to achieve the required proficiency for all elements of the force. In principle the resources are 'bolted' to the task and cannot be removed without removing or reducing the task. Conversely, it would not be possible to assign a task without the resources required to achieve it. Commanders at all levels in the SORD process are responsible to achieve the training level assigned within the resource envelope

provided. If for any reason this is assessed as unachievable, the commander making the assessment must declare a risk to operational capability to his/her superior commander. The superior commander will either resolve the issue or declare the risk to the next level of command. DAT is developing an automated management tool to support this process (Army Risk Assessment Model).

It is proposed that there are three elements to the articulation of training direction:

✤ B-GL 300-008/FP-00 Army Training, which is the philosophy that describes the principles and tenets of training in the Canadian Army and should have a relatively long shelf life;

✤ The Army Training Strategy that defines the path from the status quo to the desired end-state described in Army Training and should require review every 5 years; and

✤ Army Training Policies, which reside in the LFCOs and various safety manuals that regulate actions in training and are amended as needed.

The fundamentals apply to all three divisions of training described as follows:

✤ Collective training that is the process that forges soldiers, leaders, resources and time into cohesive, combat ready units capable of meeting DPG tasks;

✤ Individual training, including the recruitment, selection, education and training of the required number soldiers and officers to man Army units; and

✤ Continuation training, which preserves individual and crew skill-set proficiency and spans the gap between the other two elements.

CONCLUSION

Declining moral health and training effectiveness will not magically reverse themselves at the mention of these fundamentals. For change to occur there must be a wholesale acceptance of the problems and their causes, accompanied by determined action to fix them. The fundamentals provide a point of departure, and to some extent each one represents a unique thrust within the overall effort. None of this is possible without a command climate conducive to closing the 'knowing-doing' gap, and a culture that rejects bureaucratisation. While agreed fundamentals guide change, only action will effect it.

There are no doubt other fundamentals that could populate this list and readers are encouraged to offer their own and/or criticize these. While we need to create a unified view of the philosophy underpinning the new paradigm, we must not become mired in the realm of philosophy to the exclusion of practical considerations. The next issue will offer a construct for an Army Training System that addresses the ills described in this article, and embraces the fundamentals offered here.

ENDNOTES

1 DPG 99, Chapter 3 p 3-10.

2 Note: this is an updated version of the table in Field Training Regulations Chapter 1.

3 Cudmore J, "Soldiers believe war capabilities suffering: survey," *The National Post* ,22 November 1999, p A6

4 Jeffey Pfeffer and Robert I. Sutton "The Smart Talk Trap," *Harvard Business Review*, (May/June 1999).

5 MGen M.K Jeffery, Training Situation Brief to Army Council, 23 July 1998.

THE CANADIAN ARMY'S PRINCIPLES OF WAR IN THE FUTURE
ARE THEY RELEVANT?

Major J.C. (Craig) Stone, CD

Sir Michael Howard's observation is particularly relevant as we approach the turn of the century and a new millennium. In recent years many armies of the world have been reviewing their doctrine and developing new plans for the future. The Canadian army, although later in starting than some of our Allies, is also in the process of writing new doctrine and developing plans for the future.[2] The list of studies on future requirements grows each year as more and more nations try to develop a road map to get them from now to some time frame in the future. Force XXI, Army After Next, Joint Vision 2010 and Army 2025 are just a few of the studies that have been published by our Allies.

One of the key issues driving this renewed focus on doctrine and future requirements is the dawning of the so called information age. In the military context, it is more often referred to as the Revolution in Military Affairs (RMA). The notion of information age warfare and information dominance is tied to the ability to process information faster and to have situational awareness on the battlefield. It is considered by many as one of the defining characteristics of the RMA.[3] As well, most of the new technologies that facilitate the revolution are linked to providing a system of systems that allows information to be processed quickly and shared on the battlefield at all levels of command.

There is an enormous amount of literature available on the RMA and it covers a wide spectrum of ideas and areas of study. Previous work by this author reviewed this literature and discussed the Canadian context for the RMA debate.[4] This paper is a further examination of the RMA subject with the intent of exploring a particular area of the debate.

For Canadians, one of the more important issues in the RMA debate is to establish the type of force structure, equipment and doctrine needed to meet the challenges of the future security environment. This is a significant task because of the lack of clear strategic and political guidance from the Canadian Parliament and the government of the day.[5] Nevertheless,

> *The final question that must be asked about every theory or work of great importance is not only in which way it is still relevant—but also in what ways it has become obsolete.[1]*
>
> —Sir Michael Howard

there are personnel looking at the issues and the Army's future development plan is the first step in a long process to move the Army of Today to the Army of Tomorrow and beyond.[6]

As the Army goes through the process of developing new structures and doctrine for the future, there are a number of issues that must be addressed. For example, how will the army fight in the future and will that be different than today? Will the current principles of war articulated in our new doctrine manuals remain relevant in the future? Will leaders require different skill sets and capabilities to command and lead soldiers on the battlefield? Will new technology provide the information awareness required for new precision strike weapons or will the amount of information simply overwhelm the commanders to the extent that they can not make decisions? These are just a few of the questions that must be discussed, debated and resolved as the Army moves into the future.

Returning to Sir Michael Howard's observation, the aim of this paper is to examine just one of the issues mentioned above, the principles of war, with a view to discussing whether or not they will remain relevant, in need of adjustment or become obsolete within the context of the RMA. The paper will provide a general overview of the theoretical literature available on the future security environment and the expected nature of future warfare. Within this context, the Canadian army's principles of war will be examined and the utility for future application assessed. Specifically, the paper will discuss whether or not our principles of war are appropriate to the future and what amendments, if any, are necessary.

AN UNCERTAIN FUTURE

A significant portion of the existing RMA literature discusses the nature of future conflict and the characteristics that will define warfare in the future. Hammes notes that "there is a growing consensus that the world is on the cusp of a fundamental shift from an industrial society to an information based society."[7] As well, Metz and Kievit indicate that "the basic premise of the RMA is clear: throughout history, warfare usually developed in an evolutionary fashion, but occasionally

ideas and inventions combined to propel dramatic and decisive change. This not only affected the application of military force, but often altered the geopolitical balance in favour of those who mastered the new form of warfare."[8] Metz and Kievit see the defining characteristics of future conflict as the alteration of the relationship of accuracy and distance in application of military force. They also see the increasing interest in information warfare and the reduction in both casualties and collateral damage normally associated with military operations.[9]

In the context of this paper two general themes in the literature on strategy and future conflict are important. First, there is the notion of nation states becoming irrelevant. Linked to this notion is the argument that we are depending on technology and smart weapons and losing our ability to use strategy and operational art as a means to prosecute and win wars. Second, is the discussion on the actual nature of conflict in the future.

At this point, the literature is not conclusive and there are many views and opinions on both points. For example, the notion that nation states are becoming irrelevant is perhaps overstated. Nation states may be less relevant in some parts of the world but for those trying to enter NATO, for example, the notion of nation states may be more relevant at this juncture. Also, the argument that we are losing the ability to exercise strategy and operational art could be viewed as the opposite side of the technology and weapons coin. Using the German *blitzkrieg* as an example, most nations had access to the technology but only the Germans applied operational level thinking to create something different from the previous model. The important point appears to be the ability to think and be flexible in thought.

In today's environment defence planners are trying to reshape forces and resources to meet new challenges and threats. We are in an age where the enemy will not be the monolithic Warsaw Pact force of the past but rather any one of a variety of threats ranging from the possibility of high intensity combat to a mid to low intensity semi-conventional conflict.[10] The environment will be anything but predictable and the previously neat and tidy method of state departments dealing with each other is not a given in the future.

Jablonsky observes that the structure of international relations is changing and with that change will come a return to the First Wave conflict of the 1600s and not Third Wave conflict.[11] The notion of first, second and third wave conflict is tied to the writings of Alvin and Heidi Toffler and the wave theory of conflict. The Tofflers' use an economic basis and argue that conflict is tied to the development of civilization. For them the First Wave conflict was linked to the Agrarian based society, Second Wave conflict was linked to the Industrial Revolution and Third Wave conflict will be linked to the emerging Information Age society.[12]

Jablonsky's argument about the return to First Wave conflict is directly opposite of the notion that high technology will provide a linear extension of the past into the future. Fourth generation theorists, who argue that the state-centric world of Clausewitz's remarkable trinity is ending, also support the argument about a return to first wave type conflict. Fourth generation theorists argue that the state will lose its monopoly over armed violence and current distinctions between war and crime will break down.[13] Their theory world is a return to a pre-modern politico-military environment. Although there is some similarity with the wave theory of the Tofflers, they are not the same and it

would be useful to understand some of the differences.

Unlike the Tofflers who are economic determinists, fourth generation theorists model the development of warfare from 1648 to the present. The theory begins with first generation modern warfare at the end of the Thirty Years War and the signing of the Peace of Westphalia.[14] First generation warfare was the smooth bore musket era using the tactics of line and column.[15] Second generation warfare emerged in the middle nineteenth century with the technologies of steam, metallurgy and mass production. It utilised rifled muskets, breechloaders, machine guns and indirect fire. Both first and second-generation warfare is thought to be technology driven.[16] In contrast, third generation warfare is considered to be idea driven and is tied to the German *blitzkrieg* with the emphasis on qualitative manoeuvre over quantitative fire.[17] Put another way, "the first three generations of modern war focused, in turn, on massed manpower, massed firepower, and finally manoeuvre….each sought to defeat the enemy militarily."[18] The literature sees the emerging fourth generation as a conflict between new technologies on one hand and low intensity terrorist style conflict on the other hand.[19]

Ralph Peters expands on this notion and discusses how in many places the traditional structures of government are now co-existing nervously with the other emerging systems—clans of warlords, technical crime networks, drug cartels and the emerging city states.[20] Among these societies war tends to revert to the most primitive character and, as recent events in Rwanda, Burundi and Zaire illustrate, can often manifest war's worst excesses.[21] The opponents will operate without the traditional boundaries of the past and in most cases will be able to assimilate technologies faster than our regulation-bound bureaucratic structures. To

understand fourth generation war, it is necessary to examine political, economic and social changes in society as well as technology.[22] Although beyond the scope of this paper, Hammes discusses each of these areas in detail as well as the notion of Netwar as a model for the fourth generation of war.[23] Arquilla and Ronfeld, in discussing the future of war, provide a model for mid- to high-intensity conflict and a model for low intensity conflict. They argue that the information revolution will cause shifts in how societies come into conflict and how armies will wage war.[24]

Hammes notes that Arquilla and Ronfeldt's arguments are futuristic but still third generation made more lethal by technology. However, Hammes does believe that Arquilla and Ronfeldt's notion of Netwar in the context of low intensity conflict is accurate for the next generation of warfare.[25] Van Crevald also supports this concept of future war and notes that war will turn to the complex environment of low intensity conflict, because computers are dominating the relatively simpler environment of mid and high intensity conflict.[26]

Bunker adds to the debate on future conflict being primarily low intensity by raising the issue of advanced technology warfare replacing modern warfare. In essence, Bunker discusses two forms of future conflict, the low intensity conflict style and the advanced technology style, within the context of the two forms being diametrically opposed.[27] One of Bunker's more important observations is that the low intensity conflict version is being used by most outside the West as a counter to our military system. This combined with the West's aversion to many of the methods normally associated with low intensity conflict (i.e. terrorism) leads him to conclude that the West will continue to choose advanced technology over low intensity conflict.[28]

This is important when viewed in the context of what Peters observes is happening today. He notes that "we are ineffective combatants against emerging threats because of laws and practices that extend citizen-equivalent judicial treatment to foreign criminals...."[29] This argument is further supported by the work of Professor John Keegan who argues that the world is seeing a re-emergence of warrior societies. People who are psychologically distinct from the West, and whose young are raised to believe fighting is honourable and killing in warfare glorious. A warrior in such a society "prefers death to dishonour and kills without pity."[30] It is not difficult to understand the link to the pre-1648 environment of politics and war to which Jablonsky refers.

While our perfect opponent may be the middle level enemy with a rigid centralized decision making process (like Iraq) most of the threats we are likely to find in the future will not fit this description.[31] The twenty-first century soldier is expected to be better armed, protected and informed than soldiers were in the past. Digitilization of the battlespace will create a simultaneous picture of the battlefield from the individual soldier to the commander at all levels.[32] Soldiers will have weapons with increased lethality and suits that combine protection, voice and video data systems and Global Positioning System (GPS) interface.

In summarising the debate on the nature of future warfare, the Canadian army's new keystone manual *Canada's Army: We Stand on Guard for Thee* is an excellent source. This manual recognizes the future as:

> Future conflict is also likely to erupt with little warning and in unforeseen areas, requiring immediate response by other countries and/or international security organizations if it is to be contained or limited. Conflict itself will be characterized by operations involving not just the

armed forces and other security elements of states, but on an increasing basis, transnational and even intra-national armed groups and paramilitary forces outside the control of governments. These phenomena represent the emergence of new non-state centres of power, and will further complicate the future security environment. World-wide criminal syndicates, international drug cartels, violent political and religious fringe groups even now threaten the common good of societies, in many parts of the world. Additionally, new types of regimes may arise out of the detritus of collapsed states which could exist mostly for criminal gain, similar to the mercenary soldier fiefdoms and pirate kingdoms of earlier centuries. In short, the means to wage conflict and apply violence on a large scale will no longer be the exclusive preserve of nation-states, thus representing a major shift in the global security order.[33]

PRINCIPLES OF WAR IN THE FUTURE

The Army's identification of this future environment would lead one to believe that the doctrine espoused in this keystone manual will take the Army into the future. Herein lies the dilemma for this paper. The Army's new doctrine is a clear shift from an attrition based approach to a manoeuvre warfare approach. As well, there is clear link to the US doctrine at the corps level.[34] However, there are a number of authors who argue that the US doctrine of manoeuvre warfare and their nine principles of war are either not relevant in the twenty-first century or need significant modification.

For example, Tiede notes that "The principles of war today stand as an incomplete and largely unused approach to military theory. It is time to revisit them and modify them so they can serve us as originally intended."[35] Tiede discusses principles and asks

where the principles of intelligence, strategy, technology, logistics and defining war's relationship to diplomacy are in light of the nature of future war.[36] More recently, Russell Glenn discusses the reasoning behind the new proposed principles of operations in the 1998 version of FM 100-5.[37] The US Army is replacing their current principles of war and principles of operations other than war with one list of principles of operations.

Since the Canadian army uses US Corps level doctrine and is now advocating manoeuvre warfare as its way of war, what do the changes being discussed by Tiede and Glenn imply for our principles and the way we are training our units to fight? More importantly, should we be asking ourselves whether or not our principles of war are relevant in the future.

Principles of war are not new. During the past two thousand years commanders and military thinkers have set down their thoughts on the conduct of war. In essence, these ideas were the factors they found essential to the achievement of success. The ideas have taken different forms and have ranged from various philosophical propositions to the formal one hundred and fifteen maxims of Napoleon.[38] Nevertheless, there is debate on whether or not principles of war should be such an essential element of military thinking. Zvi Lanir notes that some contemporary theoreticians of war conclude that studies that prove the validity of the principles of war rely on interpretative logic and are therefore circular in nature.[39] The same theoreticians argue that principles of war are simply common sense and could apply to many other competitive human activities.[40] Perhaps more relevant to today is the issue of whether or not principles of war add any value to the quality of military thinking on war fighting. In the conclusion of John Alger's work, Alger casts doubt on their value. "But to whatever form or content the 'principles

of war' may lead, the proper role of theory in war must remain paramount in the minds of teachers and students alike."[41] Similarly, Harkabi in his analysis of principles of war argues that principles of war do not deepen our understanding of war and Paret argues that principles have provided a generation of soldiers with an excuse not to think themselves.[42]

In discussing the epistemology of principles of war Leonhard notes that, despite this small but vocal group arguing against principles of war, most writers and thinkers of the past believe there was something to be learned from the past.[43] However, it is only in recent times that we have tried to reduce these truths to a list.[44] Lanir observes that "the consistency of the principles of war indicates that, despite the doubts expressed by military theoreticians concerning their validity, they satisfy a deep need in military thinking."[45]

From the time of Jomini and Clausewitz there has been a clear trend towards reducing the principles to a short teachable list.[46] Most notably, J.F.C. Fuller reduced the principles to a list of eight and later nine principles. From his earliest writings, Fuller maintained war was both a science and an art, and was governed by fixed laws or principles.[47] From these early lists, the principles have found their way in to the doctrine of most western armies. The main stream debate is now on the role these principles should have in military thinking.

Clausewitz's aim in his *Principles of War for the Crown Prince in 1812* was to provide a framework in which the Crown Prince could train his judgement for thinking and making decisions. It was not intended to act as a set of rules for battlefield decisions.[48] This is also how Brodie viewed principles. "In the end, Brodie suggested to the students that the principles of war be considered like the titles of chapters in a book. By themselves, these "chapter titles" are

of little use; the student gains useful knowledge only by actually reading the chapters."[49]

This notion of providing a framework for the study of war is important when viewed in the Canadian context. Until very recently, it was difficult to discern any direct reference to Clausewitz, or any indications of his influence in Canadian doctrinal manuals.[50] The introduction of Clausewitz in the Army's new doctrinal manuals is clearly evident and only time will tell if we use the principles in the Clausewitzian manner of providing a framework to think about war or as a checklist. Based on how our new doctrine is written, a strong argument can be made that we do not consider the principles of war as a checklist. Our definitions and explanations allow flexibility in application and do not insist on each principle being applied, only that they be considered.

Unfortunately, if one accepts that the Army is moving to this Clausewitzian approach to thinking about principles of war, one must deal with the recent debate on the relevance of Clausewitz to the future warfare. Steven Metz argues that its time to hold a wake for Clausewitz and then to let him rest among the historians.[51] Metz is not alone in this view and his article discusses the recent works of Alvin and Heidi Toffler, *War and Anti-War*,[12] John Keegan, *A History of Warfare*, (Toronto: Random House,1993) and Martin van Crevald, *A Transformation of War*,[26] all of whom expect future violence to be fundamentally different then the past. All three reject what they see as the conceptual limitations of Clausewitz as they peer into the future.[52] However, their arguments have not reached a consensus and although they start from a common point, they move in different directions.

In the context of this paper, the issue is not that there is debate on the relevance of Clausewitz, but rather that there is a debate about the philosophy

Canadian	Current US	New US
Selection and maintenance of the Aim	Objective	Objective
Offensive Action	Offensive	Offensive
Concentration of Force	Mass	Massed Effects
Economy of Effort	Economy of Force	Economy of Force
Security	Security	Security
Surprise	Surprise	Surprise
Flexibility	Simplicity	Simplicity
Co-operation	Unity of Command	Unity of Effort
	Manoeuvre	Manoeuvre
Maintenance of Morale		Morale
Administration		Exploitation

Table 1: Principles of War[53]

of future war. The Army needs to take advantage of the renewed interest in the development of doctrine and actively engage in a debate about the principles of war for the future.

In Canadian doctrine there are ten Principles of War. Table 1 provides a list of the Canadian principles and, for comparison purposes only, the current and future US principles are shown.

Although it is not intended to discuss each one of these principles, it is important to recognize that there are similarities between the countries just as there are differences. The differences will be found in how our respective armies define and apply their principles. In essence, do they use the principles as a framework to think about war or as a checklist? As already indicated, the Canadian army appears to allow more flexibility.

For example, the Canadian army defines selection and maintenance of the aim as "Every military operation must have a single, attainable, and clearly-defined aim which remains the focus of the operation and towards which all efforts are directed."[54] This is similar to the U.S. principle of Objective but our interpretation is more flexible. Leonhard notes that the principle of objective implies you need a clear government objective before commencing operations and this will not work in the information age.[55] Leonhard notes that in the information age technology will allow governments and military authorities to have virtual presence on the battlefield. This will allow governments to have the military conduct reconnaissance and then decide on the objective. In his words the principle of objective is really about accelerating options.[56]

The Canadian definition does not have the restrictions implied by the US definition and addresses many of the issues raised by Leonhard in terms of meeting the need for information to be gathered before objectives are determined. *Canada's Army* expands on the initial definition by stating "While the ultimate aim in conflict and war is to break the enemy's cohesion and will to fight, every operation at every level must also have a more limited

aim which is clear, simple and direct. This aim is selected through careful study and analysis of the assigned mission and the outcome desired."[57]

Canada's Army notes that:

none of the principles can be blindly adhered to or observed to the exclusion of others; none can ensure success in operations without reinforcement from one or more of the others. In effect, combinations of principles are to be used. For example, a peacekeeping operation will tend to emphasize security and flexibility. In warfighting, a deliberate attack will combine mostly the principles of surprise, offensive action, and concentration of force. These principles can also be applied to the army's operational planning process, particularly during the estimate of the situation, in which different courses of action may be expressed in terms of these principles to facilitate their evaluation.[58]

If our principles allow flexibility in application do we need to be concerned with their relevance to future operations? In short, the answer appears to be yes. Tiede argues that we are tied to the past and need to examine what principles are missing for the future environment being discussed in the literature on the RMA.[59] Fortunately the Canadian army already has two of the principles discussed by Tiede. Of the others, the requirement for a principle on strategy and a principle defining wars relationship to diplomacy appear to be most relevant for discussion in Canada. In terms of officer professional competence/development Tiede's thoughts on strategy have insight.. "We talk about the individual elements of the principles of war and write books and studies analyzing operations using them, but the concept of strategy is often neglected….If we don't consider the concept of Strategy important enough to include in our basic thinking process, then how can we expect our young

officers to spend time and effort in the study of military strategy."[60] It is worth noting that Tiede uses the term thinking process in his comments.

Perhaps more relevant to the theoretical discussion on the utility of principles of war in the future are the observations made by Leonhard in discussing why we should change the principles. He notes that the principles have changed many times during the past and that other nations either do not agree with the US list, have their own list or claim there are no principles.[61] Leonhard argues that one can benefit from a rigorous examination of the principles. "Either we will graduate to a newer, better way of thinking about war, or we will confirm for ourselves that the current list is about right. Either way, we have thought critically about what is literally a matter of life and death."[62]

The same argument holds true for the Canadian army. We have new doctrine and our principles need to examined and debated with the rigour advocated by Leonhard. Tiede provides a list of new principles that he believes will be required in the future. Glenn discusses new principles of operations and the move away from principles of war. Leonhard's discusses what is wrong with the current US principles of war in the context of the information age and provides a reasonable framework/list of arguments that can be used for debate. In fact Leonhard notes in his preface that his book is not intended to be agreed with but rather a book to be argued about.[63] Although it is not intended to examine each of our principles or each of the arguments made in the available literature, some examples to demonstrate the utility of review are appropriate. For example "Maintenance of Morale" is defined as the most important element on the moral plane of conflict. "It is essential to ensuring cohesion and the will to win."[64] There is no U.S. equivalent in the current version of FM 100-5 but the new version

will include morale as a principle. Glenn discusses why this principle of operation is being included in the new FM100-5 with reference to a number of past theorists and past versions of FM 100-5 that included morale as an important issue for success in battle.[65] It is clear that the principles have changed over time to reflect the changes in doctrine, technology and the thinking of leaders at the time. Leonhard notes the need for morale as a principle when he presents the "Law of Humanity" as the pre-eminent law of war for the future: a declaration that warfare is an outgrowth of the human psyche.[66] Our inclusion of morale as a principle recognises the importance of human spirit and the ability to impose our will on the enemy. This should not change in the future.

Surprise is defined as "striking the enemy at a time, place, or in a manner for which he is unprepared, creating confusion and paralysis in his chain of command and destroying or damaging his ability to fight." [67] In terms of future conflict, surprise will become even more important and our definition is very appropriate. In the less likely mid- to high-intensity conflict increased situational awareness will allow us to attack the enemy centre of gravity without going through his strength. In the more likely low intensity conflict increased situational awareness will allow tactical units to move faster and take advantage of opposing forces where they are not ready for engagement.[68] Surprise will become fundamental to our ability to dislocate enemy forces and break their will to fight.

Canada's Army indicates offensive action as "To defeat an opponent and impose our will on him demands offensive action. Such action is what achieves decisive results on operations. As a principle of war, it embodies a state of mind to seize, exploit and maintain the initiative, even when our own forces may be in a defensive posture. Moral

advantage lies with the offence because it tends to confer the initiative, gives freedom of action and compels the enemy to react to circumstances under our control."[69] Although few would argue with the need to take the initiative away from the enemy and make them react to our actions, is there a direct link between offensive action and initiative? Does one lead to the other?

The implied notion from this principle is that through offensive action you can gain the initiative from the enemy. However, history provides examples where the reverse is true. Leonhard notes that the French attacks at the beginning of the Franco-Prussian War in 1870 surrendered the initiative to the enemy and that Mao Tse-tung was most often on the defensive but retained the initiative throughout most of the Chinese civil war.[70] This notion of differentiating between offensive action and gaining the initiative from the enemy is particularly important in the context of the future. For example, in the future environment, the context of the war may not allow offensive action as we know it today to be used. In place, we may need to take the initiative from an opposing force to maintain public support for a non-governmental organization delivering limited quantities of water to a specific minority group. What we really need is an ability to create opportunities that increase friendly capabilities and decrease enemy capabilities regardless of whether or not they are offensive or defensive in nature.[71] Our definition of offensive action is very similar to the US definition and it is clearly linked to the Cold War concept of large armies fighting high intensity conflict. That is not the only kind of warfare to be fought in the future and there is room for debate about the utility of this principle in the future.

As a final example, in discussing the principle of Concentration of Force the Army notes that "to achieve success in operations, it is necessary to

concentrate force, both moral and physical, superior to that of the enemy at the correct time and place. Concentration does not necessarily imply a massing of forces, but rather having them so disposed as to be able to combine quickly to produce overwhelming advantage and deliver the decisive blow against the enemy when and where required."[72] This principle, along with our principles of Economy of Effort and Flexibility, needs debate in the context of the future operations and the information age. Precision weapons will negate the need for massing effects; new command and control technology will negate the need for forces to come together on the battlefield to concentrate force. Forces will be able arrive at the enemy location in a patternless fashion that prevents enemy anticipation, that aids in achieving surprise and maintaining momentum and that will allow maximum destruction with the least expenditure of munitions.[73] The focus will be to use our superior information awareness to increase precision, allow a more economical use of munitions and resources and provide the commander with an ability to take advantage of unforseen opportunities quickly.

One might argue that these comments are contrary to the notion that warfare is a human activity and that technology is not the solution to all problems. Such an argument is not without foundation. There is room for debate on these issues and healthy debate will help us understand what the problems might be and what solutions are possible. The main lesson is that there are changes occurring requiring debate. Some of our principles of war do need to be changed to meet the future environment and some new principles such as those presented by Leonhard and Tiede might be necessary.
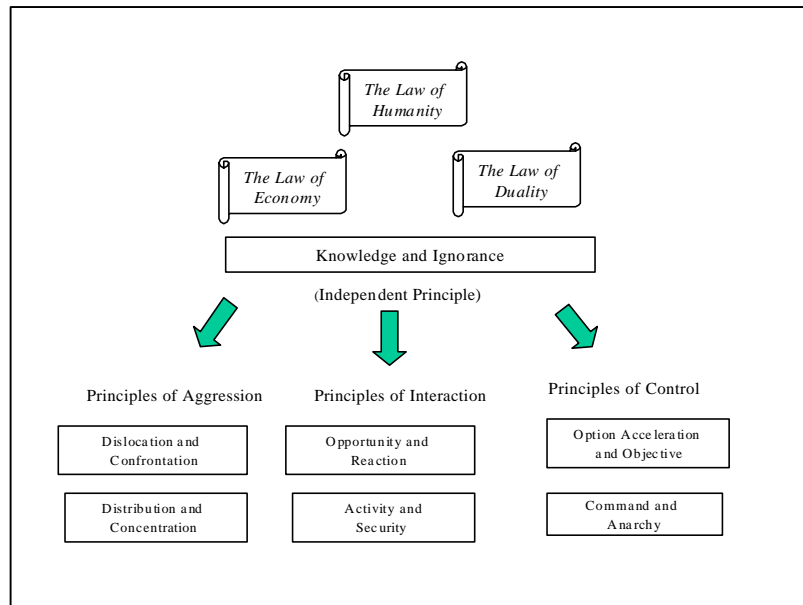
Figure 1: Principles of War for the Information Age[78]

Like Clausewitz, Leonhard notes that principles should be used as arguments or categories of thinking.[74] His new principles describe two word arguments that provide the category for which we must think and they indicate opposites sides of the argument.[75] Leonhard's new principles evolve from his premise that human conflict is governed by three laws: the law of humanity, the law of economics and the law of duality of conflict. The law of humanity is the foundation and is independent of all else. "Warfare is an outgrowth of the human soul; all human conflict is founded upon the nature (physical, psychological and spiritual) of mankind."[76]

The law of economy derives from the desire of man to exceed his means and the law of duality has its roots in the human trait for violent opposition toward other humans. "The laws ordain and acknowledge the most fundamental characteristics of warfare and provide a solid foundation of logic and reason upon which valid theory can be built."[77]

The three laws give rise to seven principles of war. Figure 1 illustrates Leonhard's principles of war for the information age.

Although it is not intended to discuss each principle, it is worthwhile to put Leonhard's thoughts about dialectic logic into the context of the principles. As an example let us look at the independent principle of knowledge and ignorance. The two words indicate opposite extremes of the requirement to have situational awareness on the battlefield.

In the information age of the future a commander with complete knowledge of what enemy capabilities and intentions are will have a significant advantage over the commander without knowledge (the ignorant commander). Ignorance will cost lives and resources. In that context, this principle is conditioned by the law of economy because the law seeks to minimize cost (including lives, time, resources, training and political will). The commander will

never achieve complete knowledge but the more spent on new technologies to integrate command and control systems that provide better battlespace awareness, the better off we will be. Leonhard's dialectic logic approach allows left and right boundaries to be established and aids in critical thinking.

Concluding Thoughts

Naturally, not all of Leonhard's arguments will be agreed upon by everyone nor should they be. What is important is that both Leonhard and Tiede have provided alternatives to the present list of principles as a basis for discussion. The discussion needs to be conducted within the context of the uncertain future that much of the

literature, including our own doctrine manuals, describes.

As members of the profession of arms it is critical that any discussion on principles remain cognisant, that the essential nature of conflict will remain unchanging and a clash of wills with the object to impose our will upon the enemy. It will always be a human issue despite the importance of technology and precision strike munitions.

This paper has presented a summary of some of the RMA issues as they relate to principles of war. As well, it has introduced some of the arguments surrounding the validity of present day principles of war. Clearly there is scope for debate on whether or not the Canadian army's

principles of war will remain valid in the future.

"History teaches that those who failed to see the future had a narrow focus, became complacent, or were captivated by passing fads and short-lived technological balances."[79] We need to make sure we don't become complacent with our new doctrine. There is a need for the Army to review the principles of war to ensure they have the right ones to take them into the future. More importantly, such a debate will allow leaders at all rank levels to improve their professional knowledge on the theory of our profession and the art of warfighting.

About the Author . . .

Major Craig Stone is an artillery officer with a BA in economics from the University of Manitoba and an MA in War Studies from The Royal Military College of Canada (RMC). He is currently a full-time student at RMC working towards a PhD in War Studies.

Endnotes

1 Michael Howard, ed., *Clausewitz and Modern Strategy*, (London: Frank Cass and Co. Ltd., 1986), p. 9. Quoted in Maj Arthur J. Athens, USMCR, "Theory on the Battlefield: Nuisance or Necessity?" *Marine Corps Gazette* 79 no. 1 (January 1995), p. 35.

2 Canada, Department of National Defence, *The Future Army*, found at www.lfc.dnd.ca/links/dlsc/Future.htm. This recently published document addresses the process the Army will use for looking at how it will be developing plans for the future.

3 Elizabeth A. Stanley, "Evolutionary Technology in the Current Revolution in Military Affairs: The Army Tactical Command and Control System," Carlisle Barracks, PA: The Strategic Studies Institute, (March 25 1998), p. 10.

4 Major J.C. Stone, "The Revolution in Military Affairs: A Canadian Perspective," July 1998. This paper was submitted in partial fulfilment of the requirements for Dr Scot Robertson's War Studies 528: Military Innovation conducted during the period September 1997 to July 1998.

5 Both the US Joint Vision 2010 and the U.K. Defence Review involved active participation and debate by their respective governments. This debate has not occurred in Canada and there is no indication that such a debate is likely in the future.

6 *The Future Army*. As indicated earlier, this document provides the framework or process for how the Army will staff future army development issues. Although this paper is focussing on army principles, readers should be aware that the Director General Strategic Planning and Chief of Research and Development are also looking at the RMA issue

from a departmental perspective. They have recently published (internally) a draft paper entitled "Shaping the Future of the Canadian Forces Defence Strategy 2020".

7 Lt. Col. Thomas X. Hammes, "The Evolution of War: The Fourth Generation," *Marine Corps Gazette* 78, no. 9 (September 1994), p. 35.

8 Steven Metz and James Kievit, "The Revolution in Military Affairs and Conflict Short of War," Carlisle Barracks, PA: Strategic Studies Institute, (July 1994), p. 1.

9 Stephen Metz and James Kievit, "Strategy and the Revolution in Military Affairs: From Theory to Policy," Carlisle Barracks, PA: Strategic Studies Institute (June 27, 1995), pp. 3-6.

10 Gregory R. Copley, "New strategic environments demand a new doctrinal view," *Defense and Foreign Affairs Strategic Policy*, (Nov/Dec 97), pp. 7-8.

11 David Jablonsky, "The Owl of Minerva Flies at Midnight: Doctrinal Change and Continuity and the Revolution in Military Affairs," Carlisle Barracks, PA: US Army War College Strategic Studies Institute, (May 1994), p. 7.

12 Alvin and Heidi Toffler, *War and Anti-War*, (New York: Little Brown & Company, 1993 Reprint paperback, New York, NY: Warner Books, Inc., 1995), p. 20. See also Steven Metz "A Wake for Clausewitz: Toward a Philosophy of 21st-Century Warfare," *Parameters*, (Winter 1994-95), p. 127.

13 Ibid, pp. 7-9.

Major J.C. (Craig) Stone

14 Kenneth F. McKenzie, Jr., "Elegant Irrelevance: Fourth Generation Warfare," *Parameters*, (Autumn 1993), pp. 51-52.

15 Robert J. Bunker, "The Transition to Fourth Epoch War," *Marine Corps Gazette*, (September 1994), p. 20.

16 Mckenzie, p. 52 and Bunker, p. 20.

17 Ibid.

18 Hammes, p. 35.

19 Bunker, p. 24.

20 Ralph Peters, "After the Revolution," *Parameters*, (Summer 1995), p. 9.

21 Paul Van Riper and Robert H. Scales, Jr., "Preparing for War in the 21st Century," *Parameters*, (Autumn 1997), p. 7.

22 Hammes, p. 36. 23 Ibid, pp. 36-38. Netwar refers to information-related conflict at a grand level between nations or societies vice the military context of cyberwar.

24 John Arquilla and David Ronfeld, "Cyberwar is Coming," *Comparative Strategy* 12, (Nov 93), pp. 141-165. See also Hammes comments on this article, p. 38.

25 Hammes, p. 37.

26 Martin van Crevald, *The Transformation of War* (New York, NY: The Free Press, 1991), pp. 198-209.

27 Bunker, p. 24.

28 Ibid.

29 Peters, "After the Revolution," p. 12.

30 John Keegan, "The Warrior's Code of No Surrender," *U.S. News & World Report*, 23 January 1995, p. 47. cited in Charles J. Dunlap, Jr., "21st-Century Land Warfare: Four Dangerous Myths," *Parameters*, (Autumn 1997), p. 28.

31 Metz and Kievit, "Strategy and the Revolution in MIlitary Affairs," p. 14.

32 J.R. Wilson, "Digital Partnership" *Military Information Technology* 2 no, 6, (1998), p. 30.

33 Canada, Department of National Defence, *B-GL-300-000/FP-000 Canada's Army: We Stand on Guard For Thee*, (Ottawa, ON: PWGSC, April 1998), pp. 112-113.

34 Canada, Department of National Defence*, B-GL-321/FP-001 Land Force Multinational Corps Operations – Corps Operations*, (Ottawa, ON: PWGSC, September 1998) This document is essentially the US Army's FM 100-15 Corps Operations, translated and issued in French and English. The Army will use US doctrine at the corps level and above.

35 Col. Herbert R. Tiede, USMC (Retd), "Principles of War," *Marine Corps Gazette* (April 1995), p. 54.

36 Ibid, p. 56.

37 Russell W.Glenn, "No More Principles of War," *Parameters*, (Spring 1998), pp. 48-66. The US Army is replacing principles of war and principles of operations other than war with principles of operations.

38 Canada, Department of National Defence, *B-GL-300-001/FP-000 Land Force, Volume 1, The Conduct of Land Operations—Operational Level Doctrine for the Canadian Army*, (Ottawa, ON: PWGSC September, 1996), pp. 1-5.

39 Zvi Lanir, "The 'Principles of War' and Military Thinking" in *The Journal of Strategic Studies* 16 no. 1, (March 1993), p. 1.

40 Ibid, 2.

41 J.I. Alger, *The Quest For Victory—The History of the Principles of War*, (Westport, CT: Greenwood Press, 1982), pp. 190-191.

42 Lanir, p. 2. Lanir cites J.Y. Harkabi, *War and Strategy*, (Tel Aviv: Ministry of Defence Publication, 1990) and P. Paret, *Innovation and*

Reform in Warfare, (1966) cited in J.M. Shafritz, *Words on War* (NY: Prentice Hall, 1990).

43 Robert R. Leonhard, *The Principles of War for the Information Age*, (Novato, CA: Presidio Press, 1998), p. 267.

44 Ibid, p. 269.

45 Lanir, p. 4.

46 Leonhard, p. 269.

47 Major Anthony M. Coroalles, "The Master Weapon: The Tactical Thought of J.F.C. Fuller Applied to Future War," *Military Review*, (January 1991), pp. 62-63.

48 Lanir, p. 9.49 Leonhard, p. 270.

50 Lt.Col. Richard J. Young, "Clausewitz and his Influence on U.S. and Canadian Military Doctrine" in *The Changing Face of War: Learning From History*, Allan D. English. Ed. (Montreal & Kingston: McGill-Queen's University Press, 1998), p. 18. In this case Clausewitz is used as a well known example. It would be difficult to find the influence of any of the major military theorists of the past in our previous doctrine.

51 Metz, A Wake for Clausewitz, p. 126.

52 Ibid, p. 127.

53 CFP 300, 95-98. Glenn, 7. Tiede, p. 36.

54 *Canada's Army*, p. 96

55 Leonhard, pp. 151-155.

56 Ibid: p. 160.

57 *Canada's Army*, p. 96.

58 Ibid, pp. 98-99.

59 Tiede, pp. 54-55.

60 Tiede, p.54.

61 Leonhard, p. 8.

62 Ibid, p. 9.

63 Ibid, p. xii.

64 Ibid.

65 Glenn, pp. 9-12. Glenn notes that the original version of FM 100-5 in 1939 included a lengthy discussion on leadership that noted man was a fundamental instrument of war and that war places a severe test of moral stamina on the individual.

66 Leonhard, p. 208.

67 *Canada's Army*, pp. 96-97.

68 Leonhard, pp. 190-191.

69 *Canada's Army*, p. 96.

70 Leonhard, pp. 83-84.

71 Leonhard, p. 91. It is useful to note that Leonhard also makes the point about our doctrine recognizing the requirement for both defensive and offensive action and therefore one should not be a principle over the other.

72 Ibid.

73 Leonhard, pp. 108 - 138.

74 Ibid, p. 245.

75 Ibid, p. 246. Leonhard notes that this is dialectic logic. It begins with a thesis then the antithesis is provided and finally synthesis. The key is framing the argument with two extremes to ensure you have to think.

76 Ibid, p. 207.

77 Ibid, p. 208.

78 Leonhard, p. 252.

79 Dennis J. Reimer, "Dominant Maneuver and Precision Engagement" *Joint Force Quarterly*, (Winter 1996-97), p. 16.

ARMOUR AT THE CROSSROADS

Lieutenant-Colonel C.M. Fletcher, CD

The Armoured Corps is on the eve of receiving several significant upgrades in equipment. With the introduction of the Leopard C2 and its gunnery simulator, the Armoured Combat Vehicle (ACV) Project approaching a critical stage, and the introduction of the Coyote reconnaissance vehicle, the time is right for a close examination of the equipping and structure of Regular and Reserve armoured regiments.

A number of equipment-related projects and redistribution efforts have recently been implemented or are close to bearing fruit for the Armoured Corps. Although these initiatives were undertaken for different reasons, they should all be considered in the same light. We need to look at the impact they will have on the current and future structure of the armoured regiments and the Army, as well as on their combat capability, both in terms of reconnaissance and tank operations, Regular and Reserve.

The current problem centres on the multiple-vehicle fleet within all corps regiments. Currently, there are two vehicle types in Regular Force regiments (the Leopard and the Coyote) and two within Reserve regiments (the Cougar and the Iltis), for a total of four. For a corps our size, this is too many vehicle types. The Operation and Maintenance (O&M) expense of stocking spare parts, the cost of training technicians and individual training demands both in the regiments and the Armour School combine to make a diversified organization such as this unmanageable and unaffordable. In addition, the synergy in armoured regiments is dissipated amongst three different capabilities—tank, Operations Other Than War (OOTW) and reconnaissance—thus eliminating the potential for forming armoured battle groups in brigades. This phenomenon is already manifesting itself in some brigades, as armoured regiments are relegated to the task of providing squadrons to infantry battle groups. To allow this to happen is to ignore one of the strengths of armour and the decisive capability an armoured battle group can bring to any operation.

Because none of the Reserve regiments share the same type of equipment with their Regular Force counterparts, their ability to augment Regular Force units during UN operations is severely impaired. Although the ACV is intended to replace the Cougar, no plan has yet been made to address equipping of the Reserve armoured regiments.

The purpose of this article is to present an outline proposal for the future structure and roles of all armoured regiments.

BACKGROUND

The following is a summary of the various equipment-related projects and initiatives that affect the Armoured Corps' structure and the combat capability of the Army. This summary will be used as a basis for the remainder of this paper.

The **Equipment Rationalization Plan (ERP)** that was recently implemented affects the Regular Force and Reserve armoured regimental structure in several important ways. It removes the Cougar from service with Regular Force armoured regiments and allocates it solely to the Reserve armoured regiments. At the same time, it retires 95 of the original 195 Cougars from service. The Coyote, with its surveillance equipment removed, has replaced the Cougar squadrons in the Regular Force regiments. Further, the ERP has reduced armoured recce troops in size from seven vehicles to five. (See Figure 1)

The **Coyote project**, implemented in 1997, purchased 203 reconnaissance vehicles for armoured regiments, brigade reconnaissance squadrons and infantry battalion reconnaissance platoons. These vehicles have since been redistributed by the ERP to permit the saving of scarce O&M funds within the Army and to provide a Coyote fleet in operational theatres. Although originally intended for Reserve reconnaissance regiments also, no Coyotes have been allocated to the Reserves due to concerns with the individual training costs and maintenance demands primarily related to the sophisticated surveillance suite.

The **Leopard Thermal Sight (LTS) project** was designed to provide for better night-fighting capability in the Leopard tank. The project will meet this aim and provide additional upgrades to enhance the operational effectiveness of the tank. All 114 Leopards will be upgraded to Leopard C2 status. A modern gunnery simulation system has been included as part of the LTS project. The simulator will provide a major step forward for individual training both in the regiments and at the Armour School. Following implementation, the Leopard C2 will remain in service until 2010 or longer.

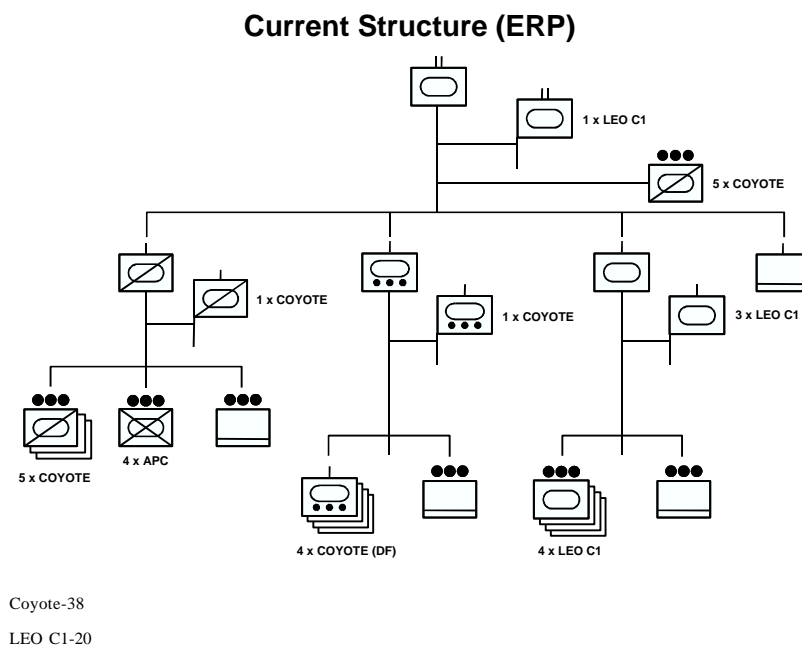The **Armoured Combat Vehicle (ACV) project** is currently in the Capital

Current Structure (ERP)

1 x LEO C1

5 x COYOTE

1 x COYOTE

1 x COYOTE

3 x LEO C1

5 x COYOTE

4 x APC

4 x COYOTE (DF)

4 x LEO C1

Coyote-38

LEO C1-20

Figure 1: Current Structure (ERP)

Program and is estimated to cost approximately $2.1 billion. The project is to replace the Leopard and the Cougar fleets of vehicles in the 2005 timeframe or later. While it is unlikely that the Cougar and the Leopard will be replaced on a one-for-one basis, the extent of distribution is unknown at this time.

The ACV is to be optimized for OOTW as opposed to the full range of war-fighting operations. The ACV concept paper[1] makes it apparent that the acquisition of the ACV will curtail the ability of armoured regiments to fight in all operations of war. It is clear that any transition from a Main Battle Tank (MBT) fleet to an ACV fleet will represent a degradation of the armour capability. If the real need is simply to improve the Armoured Corps' capability in OOTW, there is no need to purchase an entire fleet of vehicles for this purpose. A review of the Coyote's capabilities compared to the ACV concept paper reveals that the only shortfall of the Coyote is its inability to destroy tanks while stationary and on the move. This shortfall could be resolved far more economically either by using an appended anti-tank missile or by tactical grouping with tube-launched optically-tracked wire-guided (TOW) missiles. A Coyote could then accomplish the OOTW role in addition to its primary role of reconnaissance.

The Operational Research Project *Quarré de Fer* clearly outlines the capability gap between the ACV and the M1A2 tank. In a study designed to compare the performance of MBT and ACV in warfighting and OOTW, the following startling quotations appear:

The study clearly demonstrated the difference in the capabilities of the two vehicles used. It was also a revealing process regarding implications to doctrinal and tactical application associated with the employment of either an ACV or a tank organization. The ACV was unable to manoeuvre in the face of the enemy. When it did so, it was destroyed. Consequently it was necessary to employ ambush tactics, mainly in the defence, when the Canadian battle group was equipped with ACV. The study indicated that the use of ambush tactics still resulted in the ACV suffering 1.7 to 3.1 times the casualties compared to the MBT. The ACV was only 1/3 to 2/3 as effective as the M1A2. What is illustrated is that the firepower and protection limitations of the ACV resulted in much heavier Canadian losses from both direct and indirect fire. The inability of the ACV to manoeuvre in contact with the enemy severely restricted the tactical flexibility and deployment of the entire Canadian force. Such limitations markedly restricted the options available to the unit commander and ultimately resulted in comparatively higher losses. As a consequence of the latter fact, the ACV battle group was considered combat ineffective following the battle in both the defence and the attack scenarios.[2]

The research investigated comparisons in the fifteen OOTW tasks identified in IRON NOBLE. Results indicated that the ACV was considered superior in only four tasks. This outcome was specific to tasks where the ACV's weight, stealth and speed were desirable attributes. The M1A2 was considered superior in nine of the fifteen OOTW tasks.[3]

In summary, the study concluded that the ACV could not be used boldly and aggressively in warfighting situations. It was unable to generate the mass and shock action of a MBT-equipped armoured regiment. Being aware of the ACV's limitations and deliberately purchasing it as an alternative to the MBT in warfighting would be morally and ethically wrong and courts defeat.[4]

If allowed to stand, the overall effect of these initiatives will be to weaken the armour close-combat capability. We are already started in that direction. An end

state structure comprised of a Leopard C2 squadron, a recce (Coyote) squadron and a cavalry/Direct Fire Support Vehicle squadron will destroy the notion of armoured battle groups and paralyze the regiments with an astronomical training and O&M bill. In addition, Reserve regiments have a unique piece of equipment preventing them from properly augmenting Regular Force regiments for operations.

END STATE STRUCTURE (2005)

In addition to the observations made by Operational Research Project *Quarré de Fer*, the end-state structure of the Armoured Corps is a matter of great concern and is primarily related to the multi-vehicle fleet issue. There are some serious disadvantages that are important to understand. Because the three different squadrons in the Regular Force regiments currently represent three different capabilities (recce, OOTW and warfighting) the tendency is to piecemeal the armoured regiment depending on the task. As a result of this structure, it is impossible to form an armoured battle group, and the commander's only option will be the formation of infantry battle groups.

In order to support four vehicle fleets, high O&M costs are experienced, primarily in terms of spare parts. There is a requirement to train and sustain vehicle technicians to support four fleets of vehicles. Training costs both at regiments and the Armour School are high. For Regular Force regimental commanding officers to train crewmen in gunnery, surveillance and driving/maintenance for flexibility of regimental employment on three vehicle types is very time consuming and costly. The Armour School will need to train officer candidates and senior NCMs on gunnery, surveillance, and driving/maintenance during Armoured Officer Classification Training (AOCT) and the QL 6A and QL 6B courses on all fleets and capabilities. As a minimum, the addition of a third vehicle type would likely require

an additional phase of officer training and significantly lengthen NCM courses. Finally, with Reserve regiments training on a vehicle unique to them, the opportunity to provide support to real operations is all but lost.

For all of these reasons, it is critical that the post-ACV structure of armoured regiments minimize the numbers of vehicle fleets. This will allow for concentration of effort in terms of collective and individual training, O&M, operational capability and efficiency. See Table 1 for an outline end-state structure.

As the Leopard C2 is replaced by ACV, it will be critical to maintain the ability to fight in all operations of war, as indicated by the 1994 White Paper on Defence. Care must be taken not to lose any combat capability in this process.

A SOLUTION FOR THE TRANSITION TO ACV

Based upon the problems identified above, there is an urgent need to define the structure post-ACV and to modify the current structure immediately. Fulfilling this need will mitigate the effects described earlier in this paper and properly prepare the Corps for the arrival of the ACV. This structure can be implemented with no new equipment and will allow for the immediate retirement of the entire Cougar fleet. It encompasses a two vehicle fleet for the Corps, including the Reserve component, and is based upon two 14-tank squadrons of Leopard C2 and a squadron of reconnaissance on Coyote in Regular Force units (see Figure 2). All Reserve armoured regiments would be equipped with the Coyote (less surveillance equipment) in a cavalry role
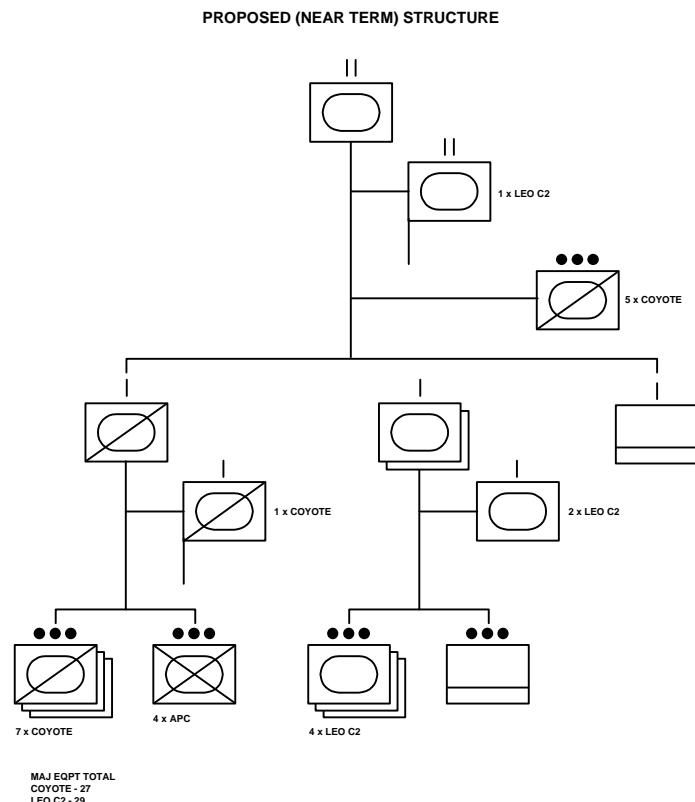
PROPOSED (NEAR TERM) STRUCTURE

1 x LEO C2

5 x COYOTE

1 x COYOTE

2 x LEO C2

7 x COYOTE

4 x APC

4 x LEO C2

MAJ EQPT TOTAL
COYOTE - 27
LEO C2 - 29

Figure 2: Proposed (Near Term) Structure

Lieutenant-Colonel C.M. Fletcher

and Reserve recce regiments would remain equipped with Iltis until replaced with Light Utility Support Vehicle (LUSV).

There are many advantages to this option but the principal one is a reduced O&M cost for the Army and a reduced training requirement to maintain qualified crewmen in the regiments. With only two fleets of vehicles, less individual training is required both in regiments and at the Armour School, with the effect that costs are reduced and crewman are more readily employable in regiments. With a stripped-down Coyote in the Reserve units, militia soldiers can be trained on driving, maintenance, gunnery and tactics and will be able to augment Regular Force regiments on collective training and operations.

This would represent a similar training load for the Reserve armoured units as compared to the Cougar they now use. If the Cougar fleet were retired from service immediately, there would be a resultant O&M and Individual Training saving. With two tank squadrons in each regiment, brigade collective training is greatly enhanced by the ability to form more combat teams or an armoured battle group. Initial staff checks indicate that this organization can be manned within the current armoured regiment establishments.

As all 114 Leopards would be required in this proposal, a slight increase to O&M for the tanks (or a requirement to restrict mileage) is foreseen. The savings resulting from

withdrawal of the Cougar from service may offset this increase. This solution is seen as a valid trade-off in order to maintain an essential element of the Army's combat capability. The smaller size of tank squadron (14 tanks) is not necessarily a disadvantage as it brings Canada in line with many of its NATO allies. There are, however, insufficient Leopard Armoured Recovery Vehicles (ARVs) to support six squadrons plus the School. While a minor disadvantage, this risk is worth accepting in order to maintain an essential element of the Army's combat capability. The purchase of three additional ARV can be addressed through the Miscellaneous Requirement process.

Unit	Coyote	Leopard C2	ACV
The Royal Canadian Dragoons	27	29	29
Lord Strathcona's Horse (Royal Canadians)	27	29	29
12e Regiment Blindé du Canada	27	29	29
Armour School	16	25	25
Land Force Areas (x3)	12#	-	-
Infantry Battalion Recce Pl (x 6)	30	-	-
Defence Research Establishment Valcartier	1	1	1
Canadian Forces School of Electrical and Mechanical Engineering	2	1	1
Log Stock	3		
Theatre suite	34	-	-
Totals	**203**	**114**	**114**
# LFAATC not allocated Coyote, rather LFAA armoured units use the Armour School vehicles.			

Table 1: Armoured Vehicle Requirements (Near – Long Term on Reorganization)

RECOMMENDATIONS

In the near term, armoured regiments should be restructured as shown in Figure 2 and Table 1(Equipment Distribution). Each Regular Force armoured regiment should be assigned two squadrons of 14 tanks each with the implementation of the Leopard C2. All Reserve armoured regiments should be re-rolled into cavalry, and the Coyote DFSV vehicles should be given to area training centres for their use. In Land Force Atlantic Area (LFAA), however, Reserves should use the Armour School's Coyotes. In order to support the current level of operations, an in-theatre operational suite of 34 Coyote should be earmarked. When repatriated to Canada from operations, the Coyote should go to the LF Area training centres. The Cougar should be retired from service immediately.

The OOTW role should be assigned to reconnaissance squadrons of the Regular Force armoured regiments. As Reserve Force armoured regiments would be equipped with the Coyote, this would allow them to augment the Regular regiments for operations in accordance with the current concept for Reserve employment.

Regular Force recce squadrons should be assigned missions of reconnaissance operations in warfighting and OOTW and cavalry operations. Regular Force MBT squadrons should be assigned the missions of OOTW (combat operations) and warfighting. Reserve armoured units should be assigned the cavalry role on Coyote, and reserve recce units should continue with the light recce role on Iltis or LUSV.

CONCLUSION

A multiple-vehicle fleet in Regular Force armoured regiments now and in the future is unjustifiably expensive and is ineffective in battle group operations. Training and O&M costs, coupled with a loss of synergy in the armoured regiments, are the major detractors. Operational Analysis has compared the ACV with a representative MBT in warfighting and OOTW. The results of this scientific analysis are clear—the ACV is simply not capable of doing the job and would lead to a serious capability gap if it were allowed to develop as currently planned.

The Army's White Paper assigned tasks of participating in warfighting operations have not changed. The Army must, therefore, focus on remaining proficient in war fighting skills and must be prepared to conduct OOTW as it remains prepared to do other tasks.

The Canadian army must maintain its warfighting focus so that it will, as in the past, stand us in excellent stead for meeting the challenges that are sure to come in OOTW. Canadian participation in OOTW may be necessary through the use of Coyote (augmented by Reserves) in either the recce or utility roles, or it may require the deployment of ACV in a more aggressive stance. Either way, the Army would be prepared to meet these eventualities.

About the Author . . .

Lieutenant-Colonel Craig Fletcher graduated from The Royal Military College of Canada in 1979 with an Honours degree in English Literature, and he is a graduate of the Canadian Forces Command and Staff College and Technical Staff Training in the United Kingdom. Lieutenant-Colonel Fletcher has served in various command and staff appointments in the 12e Regiment Blindé du Canada, The Royal Canadian Dragoons and Lord Strathcona's Horse (Royal Canadians). He has also held a variety of staff appointments at Mobile Command Headquarters and National Defence Headquarters, as well as serving as the Chief of Staff 37 Canadian Brigade Group Headquarters in Moncton, NB. He is currently the Commandant of the Armour School at the Combat Training Centre.

ENDNOTES

1 Directorate of Land Strategic Concepts, *Armoured Combat Vehicle Concept Paper* (Fort Frontenac, Kingston, ON: May 1998).

2 M.K. Ormrod, P.R.S. Bender and Maj J. Noel de Tilly, Operational Research Directorate Project Report PR 9817, *QUARRE DE FER – Analysis of the ACV in Warfighting Tasks*, (Ottawa: NDHQ, Operational Research Division, December 1998), pp. ii, iii.

3 Ibid pp. iv.

4 Ibid pp. iv.

THE 1ST CANADIAN PARACHUTE BATTALION

A BRIEF HISTORY

Captain Todd Strickland, CD

Airborne. Within recent Canadian history, the very word has taken on a meaning of its own, with most civilians remembering nothing more than the very worst of the testimony that came out of the Somalia Inquiry. If asked, they would probably not be aware that The Canadian Airborne Regiment was but one of several Canadian units that were made up of paratroopers. Here in Canada, the paratrooper is not held in high esteem by the public he protects; however, this was not always the case. During the Second World War, there was one Canadian unit among the first to land on D-Day, that participated as the only Canadian unit in the Battle of the Bulge, that penetrated further than any other into Germany, and that was the only Canadian unit to link up with Russian forces: this was the 1st Canadian Parachute Battalion. The intent of this article is to examine the wartime experiences of this one unit with regard to the pertinence of the oft-quoted stereotype of Canadians as an "unmilitary people."[1]

FORMATION AND TRAINING

The success of the German Airborne forces in the battles for Holland and Belgium had not gone unnoticed, and, in August 1940, the first proposals for a Canadian airborne force were submitted to Army Headquarters by Colonel E.L.M. Burns. However, he was not supported at that time, and it was not until April 1942[2] that the Minister of Defence, J.L. Ralston, mentioned in the House of Commons that such an idea was under consideration. With the minister's statement, military parachuting in Canada began very quickly.

In June of that year, Lieutenant-Colonel R.H. Keefler was dispatched to Fort Benning, Georgia to evaluate American methods, while in the UK an initial cadre began training at Royal Air Force (RAF) Station Ringway. On 1 July 1942, the formation of the 1st Canadian Parachute Battalion (1 Can Para) was approved with a strength of twenty-six officers and five hundred ninety men. These personnel would be broken down into a battalion headquarters, a headquarters company,[3] and three rifle companies. As well, the initial request for volunteers was dispatched to all units of the Army.

Surprisingly, this request went almost totally unanswered. The reason was that by sending the request to all units, including those comprised of National Resources Mobilization Act (NRMA)[4] men who would not serve overseas, a perception was created that the unit would only see service in Canada. Potential paratroopers had to decide to either serve overseas in another capacity or opt for a parachute unit and stay in North America. Once Army Headquarters recognized this flaw as the source of the recruiting problem, the regulations were changed so that all volunteers for the unit also had to volunteer to go "active" and be obligated to serve wherever they were sent. Almost overnight, volunteers[5] began to pour in and plans were put in place to develop a Canadian Jump School in Shilo, Manitoba.

Almost all of the men[6] who served in the Battalion received their basic parachutist training in Fort Benning, Georgia, as the school in Shilo was not ready until the summer of 1943. The training the men underwent was not much different than today, although casualties[7] were far more common due to the new nature of the activity. The major differences in the training were that the men had to pack their own parachutes and the Battalion also conducted tactical training while in the US. By April 1943, the Battalion had completed its initial jump training in Fort Benning and had moved to Shilo to complete their preliminary training.

While the training of the Battalion carried on, decisions were being made as to where to employ it; on 7 April 1943, Cabinet authorized the incorporation of the Battalion into the 6th British Airborne Division. This followed the resolution of several contentious legal and administrative issues, not the least of which was that Canadian troops would be serving under a higher British commander instead of a Canadian officer. Coincidentally, the Battalion, now under the command of Lieutenant-Colonel G.F.P. Bradbrooke, assembled in Shilo on the same day to continue its training.

At this point, it was discovered that Shilo was not ideal as a parachute training centre. First, it did not have a suitable airfield; in order for the men to enplane they had to be trucked to Rivers, Manitoba (approximately forty miles away). Second, the winds were almost always above the maximum speed allowable for jumping.[8] However, the Battalion continued its training at the sub-unit level, including its first jump in Canada on 4 May 1943. All too quickly, however, training in Canada ceased, and by July the Battalion was

aboard the Queen Elizabeth and about to join the 6th Airborne Division in England.

Upon arrival in the United Kingdom, 1 Can Para became a member of the Third Parachute Brigade, commanded by Brigadier S.J. Hill,[9] and was stationed at Carter Barracks in Bulford. Training began in earnest, with the first hurdle being that all men trained in the U.S. had to re-qualify as parachutists using British methods and equipment, as the Battalion could not be certain as to which type of aircraft it would be jumping from. Several of the men refused to undergo the conversion and were returned to their former units after it was revealed that the British not only had women who packed the chutes for the troopers but also jumped without reserve parachutes.[10]

Throughout the fall, while the conversion took place, the Battalion continued to train, with the period from August to October focussing on physical fitness and weapons handling. While on the ranges, it was noted that the marksmanship level of the Canadians was below the average within the brigade. Consequently, all Canadian personnel receiving an additional six to eight hours of weapons training per week. Once the shooting improved, the emphasis shifted to collective training at battalion and brigade level, with a pronounced emphasis on night operations. This was all in preparation for the roles the division would be expected to play in the anticipated invasion of Europe.

The three primary tasks that the battalion was directed to train for were:

✤ direct co-operation with seaborne assault divisions;

✤ seizing ground which dominated a bridgehead and holding it until the follow-up formations arrived; and

✤ delaying the movements of enemy reserves located inside or outside the bridgehead.[11]

Figure 1: Members of 1 Can Para Conducting PT Under Lieutenant G.H. Macdonald Near Bulford, UK (Canadian Army Photo 34682)

As well, the training was guided by the principles established by the brigade commander—namely speed, simplicity, control, and fire effect.[12] With these in mind, the Battalion set about training with great fervor and elan. On 1 January 1944, the Battalion was augmented with the establishment of the First Canadian Parachute Training Company, which was put in place to provide a chain of trained reinforcements.

As the spring continued, the Battalion was involved in numerous exercises, weapons training, and physical training (PT), in preparation for the imminent opening of the "second front." The Battalion held its last parachute drop prior to D-Day on 15 May, following which it was inspected by King George VI and Queen Elizabeth. The strength of the Battalion was twenty-eight officers and five hundred eighty men; additionally, there were forty-three officers and three hundred thirty-five men in the Parachute Training Company. On 24 May, the Battalion was moved to a holding area near Down Ampey, where it was confined to barracks until the jump into Normandy.

D-DAY AND THE ADVANCE TO THE SEINE

The 6th Airborne Division was given the task of landing between the Orne and the Dives Rivers on the left (northern) flank of the invasion with the intent of protecting against anticipated counterattacks against the bridgehead. This was, obviously, a defensive role for the force; however, it was consistent with the training that it had undergone. Within the Third Brigade the primary tasks went to the 8th and 9th Battalions, while the Canadians were given the tasks of protecting the brigade flanks and covering the movements of the other two battalions. Specifically, the Battalion was ordered to:

✤ secure Drop Zone (DZ) VICTOR[13] for the remainder of the brigade;

✤ capture the enemy headquarters (HQ) located on the DZ;

✤ destroy the road-bridges over the Dives and its tributaries at Varaville;

✤ neutralize the strongpoint located at the crossroads in Varaville;

✤ protect the left flank of the 9th Battalion as it destroyed the gun battery at Merville; and

Figure 2: Her Royal Highness Speaking to RSM Clarke During Her Visit to the Battalion on 15 May 1944 (Canadian Army Photo)

♣ seize and hold the crossroads at Les Mesnil.

Once given these orders by Brigadier Hill, Lieutenant-Colonel Bradbrooke gave his companies the following tasks:

♣ "A" Company – protect the left flank of the 9th Battalion; seize and hold the Les Mesnil crossroads;

♣ "B" Company – destroy the road bridge at Robehomme and deny the area to the enemy; and

♣ "C" Company – secure the DZ and destroy the HQ upon it, destroy the radio station and the bridge in Varaville, and re-join the Battalion at Les Mesnil crossroads.

Ready and capable, the Battalion set about the tasks they had been given. "C" Company was the first to hit the continent, leaving the shores of England in fourteen aircraft at 2230 hours on 5 June. They left an hour in advance of the main force in order to give the company time to secure the DZ and destroy the enemy HQ that was there. Sadly, the jump did not go as planned. Coming over the French coastline, the aircraft encountered light enemy fire and became widely dispersed over unfamiliar ground with few visible landmarks. The combination of these factors meant that sticks of parachutists were dropped hither and yon with only thirty men of "C" Company actually landing on the intended DZ.[14] To further complicate matters, the vast majority of the EUREKA[15] beacons were smashed in the jump, leaving only two serviceable, resulting in the pilots of the follow-on wave having to use dead reckoning to guide them to their DZs. However, all was not lost: the men of the Company quickly set about their tasks, securing the DZ and moving towards Varaville to destroy the garrison there.

As this was being carried out, the twenty-six Dakotas carrying the remainder of the Battalion approached the DZ and began their drop. However, the lack of functioning EUREKA beacons, dust from the bombing of the Merville Battery, and the swamps all soon took a toll among the Battalion. Men were dropped over an area forty times larger than expected, with many coming down in the flooded marshland near the Dives. This led to the loss of all but one of the Battalion's radios, as well as many of the Battalion's Vickers machine guns and heavy mortars. Quite often these items tore loose from the jumpers as they left the plane, but after landing in the dark water, many jumpers were faced with the dilemma of either abandoning their equipment or drowning.[16] Not all of the men accepted these as their options: many drowned while trying to save both themselves and their equipment.[17]

With only fifty percent of the Battalion actually on the DZ, the commanding officer and his men quickly went to work. "A" Company moved directly to the crossroads at Les Mesnil and established a perimeter, which was later enlarged with the men of Battalion Headquarters. By 0300 hours, members of "B" Company were being lead to the bridge at Robehomme by a young French girl on a bike. Upon arriving at the bridge, without their promised sappers, the men took any explosives that they had carried and proceeded to blow the bridge by themselves. They then set up a position at Robehomme that they would hold until 7 June, when they were ordered to occupy the defensive perimeter at Les Mesnil with the remainder of the Battalion.[18] "C" Company had not completed all of its tasks by the time the rest of the Battalion had arrived and moved quickly to destroy the garrison and bridge in Varaville. This was accomplished by mid-afternoon on the 6 June, and the company joined the rest of the Battalion at Les Mesnil.

With its tasks completed, the Battalion, and, indeed the remainder of the 6th Airborne Division, expected to return to England. However, this was not to be; the entire division remained in the line until September. For the Canadians, their time was spent holding the vital crossroads at Les Mesnil until 16 June. At this point they were relieved and sent to a rest area near Arromanches for a nine-day break,[19]

following which they moved back to their old positions to begin an aggressive patrolling program. By early July, the Battalion realized that the Germans were no longer making an effort to dominate all of their former areas, that the efforts of the Canadians were having the desired affect. However, casualties continued to mount primarily due to long-range artillery, booby traps, and snipers. On 4 July, the Battalion was again withdrawn and enjoyed a break that would last until 21 July. While in the rest area, the Battalion received its first reinforcements[20] since D-Day. As well, Caen and St Lo both fell to the Allies on the 9 and 18 July, respectively. Rested, the Battalion moved to a new position south of the Les Mesnil crossroads, where the most prevalent features were bad weather, shelling, and booby traps. On 23 July, their parent division was tasked under the command of First Canadian Army, and the Battalion now found itself under operational command of Canadians for the only time of the war. Following another rotation through the rest camp, the battalion began to prepare for the next phase of the war in Normandy—the advance to the Seine.

On 17 August, the Battalion broke out of their positions and seized the town of Bures. The Germans had abandoned the small French town, and the only casualties were the result of booby traps left to slow the Allies. The next day the advance continued with the Battalion snatching four bridges over the St. Samson-Dives-Sur-Mer canal in a two hour period. In the process of taking this series of bridges, the Battalion had engaged and destroyed two German companies in well-fortified positions and had captured over one hundred fifty prisoners.[21] For the next two weeks the Battalion continued moving forward, alternating from lead element in the brigade to reserve. On 24 August, Lieutenant-Colonel Bradbrooke was transferred to a staff position with 38 Group RAF

Figure 3: Digging in at Les Mesnil Crossroads on 6 June 1944 (Canadian Army Photo 33831-N)

(which supported the airborne forces), and command of the Battalion was assumed by Major Fraser Eadie.[22] The advance continued with a batch of reinforcements[23] arriving on 2 September. On 4 September, the Division was withdrawn to a concentration area near Arromaches, and subsequently the Battalion was returned to Carter Barracks to prepare for further operations. The cost in casualties had been heavy, with twenty-five officers and three hundred thirty-two other ranks being killed, wounded or taken prisoner–seven officers and one hundred nine men became casualties on D-Day alone.[24]

THE FALL OF 1944

Upon their return to the UK, the entire Battalion was given twelve days leave. Concurrently, their commanding officer, the newly promoted Lieutenant-Colonel Nicklin, returned to the unit, and Major Eadie resumed duties as deputy commanding officer. Lieutenant-Colonel Nicklin now endeavored put his own stamp on the unit. Extremely aggressive and physically fit, the former football star[25] had little time for slack discipline or shoddy soldiering. The unit started to retrain very hard with all

of the companies proceeding to bombed-out areas of London to conduct training in house-to-house fighting. As well, even more emphasis was placed on weapons training and physical fitness.

On 20 October, the Colonel's vision and the will of the Battalion came to a head. At lunchtime it was revealed that the men had refused to eat and that a hunger strike was under way. This was to last four days and only ended after the universally respected Brigadier Hill came in and "discussed" the issues with the troops. The reasons for the hunger strike revolved around the new commanding officer and his rules, in particular, the dress regulations that had been implemented for both around the camp and "walking out."[26] At first glance, this hardly seems the behavior of seasoned troops; however, it must be emphasized that almost two thirds of the Battalion, including its officers, were basically fresh from training and, further, the previous commanding officer had been a relatively lax disciplinarian.[27] Following the words from the brigade commander the men ate. The next day, in typically Canadian fashion, the ringleaders reported to the Brigadier of their own accord and

apologized.[28] Training continued without further incident.

As Christmas approached, emphasis was placed on weapons training and an expectation of Christmas leave. The Germans, however, had other plans. On 16 December, the Battle of the Bulge began, and on the 20 December, 1 Can Para was put on six hours notice to move with an advance party leaving for the Ardennes.

THE LOW COUNTRIES

Looking back on the whole Ardennes involvement, one would have to say that it was not one of the highlights of the battalion history in the war. My recollection at this point is that the Ardennes was not so much covered with glory, as extreme hardship and misery.

—Sergeant R.F. Anderson, 1 Can Para[29]

After receipt of its warning order, the Battalion would spend the next three days on six hours notice to move. On the 22 December, the men had their Christmas dinner, and on the 24 December, the Battalion moved to

Figure 5: Captain Sam McGowan (dark sweater) and His Orders Group During OP VARSITY on 24 March 1945 (Canadian Army Photo 48555)

Folkstone, where they embarked for Ostend, Belgium.[30] Arriving on Christmas day, the Battalion moved to Traintignies, where they were billeted until, on 2 January 1945, they moved up to Rochefort and began patrolling. By this time, the danger of continued penetration by German forces had ended and the initiative was again in the hands of the Allies. However, for the Battalion this was still an important operation, as one-third to one-half of the men had never been in battle.

On the 6 January, the Battalion began moving, first to Aye and subsequently to Marche, spending the remainder of the week advancing through Belgian villages. On 11 January, in the village of Bunde, members of the Battalion uncovered evidence of a German atrocity: thirty-seven badly beaten, then shot, civilian bodies hidden in a cellar. In an effort to force the men to remember with whom they were dealing, one man per platoon was taken and "shown the German cruelty."[31] With the fighting in the Ardennes basically over, the Battalion participated in a brigade-sponsored winter sports competition on 14 January.

On 18 January 1945, the Battalion moved to a rest area near Panderome to await a move to the Netherlands and the Maas River. Ironically, at this point they received an issue of winter equipment and boots that would have been very helpful in the Ardennes. Ten days later, they occupied positions on

Figure 4: A Section in the Ardennes (Canadian Army Photo 45134)

The 1ˢᵗ Canadian Parachute Battalion: A Brief History

the west bank of the Maas and found themselves facing the much vaunted Siegfried Line. Here, they would spend the next three weeks patrolling in wet spring weather. Operations finally came to a close on 18 February, when the Battalion once again departed for Carter Barracks to prepare for their next task. Unknown to the men, this would be the final stage of the war: the crossing of the Rhine and the race to Wismar.

OPERATION **VARSITY** AND THE RACE FOR WISMAR

Following the near catastrophic failure of Operation MARKET GARDEN, Allied planners re-examined the employment of airborne forces. For the crossing of the Rhine, code-named Operation VARSITY, the manner in which the forces would be dropped was to change significantly. First, the drop was to be over easily recognizable drop zones that were very close to, if not on top of, the airborne force's objectives[32]—there would be no reoccurrence of the situation that had prevailed at Arnhem. Second, the drop was tactical instead of strategic in nature: it would not take place until the crossings succeeded and link-up was a near certainty. Unlike the gamble undertaken by placing the 1st British Airborne Division sixty miles behind the enemy lines at Arnhem, the DZs for the 6th Division would be within five miles of the Allied crossing sites. Finally, to compensate for the dispersal of the airborne forces that occurred on D-Day, the pilots were not allowed to take evasive action if they encountered flak either en route or over the DZ. With these changes implemented, the Allies and the 1st Canadian Parachute Battalion prepared for the largest airborne operation of the war.

The objectives assigned to the airborne forces were as follows: "to seize and hold a wooded area which overlooked the part of the Rhine River where the main assault would take place" and "to prevent enemy reinforcements from reaching the river from the east of Wesel."[33] In fulfillment of these objectives, the Battalion was given the task, along with the 9th Battalion, of taking the central area of the "Schnappenburg feature." In particular, the Battalion was to take the western edge of the woods, a length of main road and some houses, all held by German paratroops.

As with most military endeavors, the task began with a briefing to all personnel from the commanding officer, after which he gave more detailed orders to his officers. As well, Brigadier Hill also talked to all of the NCOs on the night before the drop, mentioning that should they meet any Germans, they were to treat them with "extreme disfavour."[34] Due to the relatively short time for training, and the fact that the Battalion had just come out of battle, training was limited to battalion-level battle drill and weapons training. All parachuting ceased on 19 March, and the Battalion was confined to its barracks until 24 March 1945. At 0730 hours on the 24 March, the Battalion enplaned on thirty-five Dakotas and left England en route for Germany. The Battalion would be the third portion of the brigade to jump and, in theory, would be arriving on a secure DZ.

The jump went fairly close to plan; however, the DZ was not by any means secure, with jumpers coming under fire while still in the air. The members of 1 Can Para all landed either on or near the DZ, and there was no repeat of the total dispersal that had characterized their jump on D-Day. However, casualties quickly began to mount from enemy fire on the DZ. Among "C" Company alone, the company commander was wounded and the company second-in-command was

Photo 6: Privates Balance and Phillips Cooking Atop a Churchill Tank on 7 April 1945 (Canadian Army Photo 49533)

captured. More importantly to the Battalion, Lieutenant-Colonel Nicklin was killed while he was caught up in a tree that he had become ensnared in while landing.[35] His death came as an obvious shock to the unit and was a sad mark in the unit's history.

Once it was ascertained that Nicklin was dead, command of the Battalion passed to Major Eadie and events began to occur very quickly. By noon, the Battalion began to consolidate in and around the Schnappenburg feature with all objectives secure, and at 1500 hours, an ammunition re-supply was dropped. Many great acts of heroism and sacrifice took place, including the rescue of wounded from the DZ by Corporal George Topham, for which he earned a Victoria Cross.[36] Later in the day, lead elements of the ground forces broke through to the airborne lines, with the main force arriving during the night of 24/25 March. The Rhine had been crossed. All told, casualties for the day had been fairly light, with only sixty-seven members becoming casualties. For the next three days, the Battalion held its position and swept the DZ for missing men and equipment (it was during these sweeps that the body of Lieutenant-Colonel Nicklin was found on 26 March 1945). On 27 March, the Battalion began to advance into Germany by foot, moving first to the village of Burch. Once this village was taken without any difficulty, the Brigade decided to keep advancing.

On 30 March, Three Brigade and the members of 1 Can Para received orders to maintain their advance and move up to the Dortmund-Elms canal as the preliminary move in the race for Wismar. The western Allies wanted to reach this town on the Baltic ahead of the Russians for two reasons: first, to prevent the Germans from withdrawing into Denmark, and second, to enable German forces that wanted to surrender to do so to the western Allies instead of to the Russians. With these reasons in

Figure 7: Lieutenant Colonel Fraser Eadie and Then Major Stan Waters (in Smock) Near Kolkhagen Germany on 24 April 1945 (Canadian Army Photo CHR 50958)

mind, the Brigade quickly moved-out at "breakneck speed," with the Canadians in the lead, mounted on trucks and the back decks of tanks. The tactics employed were simple: advance until fired upon, then dismount and sweep. The Battalion did this for the next three weeks, alternating with the other two battalions in the brigade as lead element. Finally, arriving in Luneburg on 21 April 1945, they paused for a nine-day rest, which was occupied by preparations for crossing the Elbe, inspections, and the gift of a movie from the Brigadier as a reward for a job well done.

The Canadians crossed the Elbe River on 30 April and advanced past the remnants of the once proud Wehrmacht towards Wismar. Wismar was reached on 2 May 1945, at approximately 0900 hours, with the Russians arriving shortly afterwards, at 1600 hours on the same day. Initially, relations between the Canadians and the Russians were fairly good; however, as the week progressed they steadily deteriorated, due in part, to the Soviet

belief that the Battalion had no business being in Wismar. On 8 May, the war in Europe ended and the fighting came to a close for the members of 1 Can Para. A week later, they were withdrawn from the line and returned to the now familiar surroundings of Carter Barracks.

The Canadian Government was eager to get a combat unit home. Due to their outstanding service, the 1st Canadian Parachute Battalion was selected. The Third Brigade and the 6th Division gave them a send-off on 31 May. Two weeks later, they set sail for Halifax, where they would receive a fantastic welcome home, marching through the city. The war was now in its final stages in the Pacific, and there was no further need of the Battalion. Finally, on 20 September 1945, three weeks after the surrender of Japan, the Battalion was disbanded. Total casualties throughout the war had been 121 all ranks killed or died of wounds, 291 all ranks wounded, 86 taken prisoner, and ten missing in action.[37]

CONCLUSION

World War Two is open to debate. What is certain is that this battalion was drawn from all ranks of society and from both permanent force and militia units. To make a generalization that Canadians are an unmilitary people is to either ignore, or be ignorant of, the contributions made by the members of the 1st Canadian Parachute Battalion. These men demonstrated some of the best traits any nation asks of its military: initiative, intelligence, courage, mental and physical fortitude, and perseverance. The history of this battalion shows that, at the closing days of the Second World War, Canadians were able to hold their own with the best units of the Allied forces against the German Army of 1944 and 1945.

From a military perspective, there are many practical lessons that could be drawn from the war diary of this unit. For example, rest and relaxation during sustained periods of high intensity operations, thorough briefings of all personnel prior to going into battle, the element of surprise, and accurate intelligence are all requirements of successful operations. Not to be overlooked is the need for soldiers to have a sense of initiative and duty so that they may complete their mission after their leaders have fallen.

Are Canadians an "unmilitary people"? Probably not, though perhaps at times slightly un-militaristic, as is shown by this Battalion's hunger strike in October 1944 and the leadership's response to it. Canadians have an ability to conduct military operations when necessity demands it, as has been more than amply demonstrated not only by the actions of this one battalion but throughout Canadian military history. This quote from the unit's last commanding officer can be applied to all Canadians, if circumstances require it:

It was the mind of the Canadian paratrooper that was so vital to everything the battalion did. They thought about one another. They were just a tight knit group of guys.

—Lieutenant-Colonel Fraser Eadie.[38]

About the Author . . .

Captain Todd Strickland was commissioned into Princess Patricia's Canadian Light Infantry (PPCLI) in 1989, serving twice with the 3rd Battalion. He was employed as an instructor at the Infantry School from 1993 to 1996. In 1997, Captain Strickland served in Bosnia the 2 PPCLI Battle Group. Captain Strickland is currently employed as G3 Plans 2 at Headquarters 1 Canadian Mechanized Brigade Group and is also working part time towards a BMASc through The Royal Military College of Canada.

ENDNOTES

1 This is taken from the title of George Stanley's *Canada's Soldiers 1604-1954: The Military History of an Unmilitary People*. (Toronto: Macmillan, 1954).

2 Although a two year delay seems excessive, it must be remembered that in 1940 only the Russians and the Germans had any real experience with military parachuting and its application. Once the German experience, (particularly in Belgium, had been analyzed, the potential of Airborne operations was recognized and more emphasis was placed on obtaining units of this type.

3 Comprised of machine gun, mortar, and (Projector Infantry Anti-Tank (PIAT) platoons). The equivalent of a modern combat support company.

4 NRMA men were soldiers mobilized under the National Resources Mobilization Act of 1940. As such they were liable for service only in Canada.

5 The initial requirements for volunteers were very demanding and included being able to march ten miles in two hours with full equipment,

fifteen miles in three hours in PT kit and boots, twenty miles in four hours in the same dress, fifty miles in twenty-four hours in battle order while carrying complement of platoon ammunition and weapons, and one hundred miles in eighty-four hours under the same conditions. Also, each man had to swim fifty yards in full battle order while carrying any weapon with him. (Extracted from *Paratroopers*, Canadian Army Training Memorandum 40, July 1944.)

6 The exceptions being the initial cadre that was trained at RAF Station Ringway in order to evaluate British methods.

7 The one Canadian death during the Basic Parachutist training was the unit's first commanding officer, Major H.D. Proctor, who was killed on his first jump when he was struck in the air by an aircraft following the one he had just jumped from.

8 These problems were solved following the war by moving the Parachute Training Wing to Rivers Manitoba.

9 A separate paper, if not a book, could be written on this one officer. Universally respected by the troops as a "soldier's soldier," he led from

the front and, though a demanding taskmaster, earned the loyalty and devotion of the men he served with. He would command the brigade, and "his Canadians" for the remainder of the war.

10 At this point Americans jumped from the door of a C-47 Dakota, while the British jumped through a hole cut in the floor of a Whitley bomber converted to carry paratroops. The British jumped without a reserve parachute as the operational jump height varied between 400 and 500 feet (above ground level) and the reserve would not have time to deploy at any rate.

11 Canada, *Report No. 138, The 1st Canadian Parachute Battalion Organization and Training: (July 1942–June 1944*). By C.P. Stacey (Ottawa: Historical Office Canadian Military Headquarters, Undated), para 22.

12 By "fire effect," Brigadier Hill was adamant about making every round hit its target. Ammunition wastage would not be tolerated as, due to the nature of airborne operations, the men on the ground would not have a limitless supply of ammunition from which to draw.

13 The DZ was selected by the brigade commander with the intent of using the marshes along the Dives as protection from the anticipated German armoured counterattacks. Sadly, he was unaware that the Germans had flooded the area in order to deny its use as a DZ.

14 This was very similar to the experience of the American airborne divisions on the other side of the invasion beaches.

15 A EUREKA Beacon was a radio transmitter designed to guide pilots to their objectives through use of a receiver carried in the aircraft.

16 It must be remembered that these men were often overloaded for the jump, with many of the men carrying up to 50% more than the prescribed load tables. As well as all of their normal load, all men carried a toggle rope, fighting knives, an escape kit, extra bandoliers of .303 cal ammunition, and many had even sewn extra pockets for ammunition onto their jump smocks.

17 Alistair Horne, *The Lonely Leader: Monty 1944–1945*. (London: Pan Books, 1995), p. 113.

18 By the time the men were ordered back to Les Mesnil, they were surrounded and had to break out and move through the German lines in order to rejoin the Battalion.

19 All units of the division rotated through the rest camps in a concerted effort to avoid "battle fatigue."

20 These reinforcements were trained as infantry but not as parachutists. This was done deliberately as the decision had been made to hold all trained parachutists back in England in anticipation of future operations. Following the battles in Normandy, the men were transferred to other battalions.

21 In honour of this feat of arms the southern most bridge was renamed Canada Bridge.

22 John A. Willes, *Out of the Clouds: The History of the 1st Canadian Parachute Battalion* (Port Perry Printing, 1984), p. 92. Major Eadie assumed command while acting as deputy commanding officer of the Battalion following the wounding of Major Nicklin by a booby trap. No concrete reason was found for the transfer of the commanding officer to a staff position within the RAF.

23 Five officers and 85 other ranks.

24 Canada, *Report No. 26, The 1st Canadian Parachute Battalion in France: 6 June–6 September 1944*, by Lieutenant F.R. McGuirey

(Ottawa: Historical Section (GS) Army Headquarters, 23 August 1949), para 46.

25 Jeff Nicklin played for several years with Winnipeg and was a player of some renown. During late 1943 and early 1944, a football game was played between the Americans and the Canadians as "a morale booster." Nicklin was instrumental to the Canadian victory.

26 Canada, *Report No. 17, The 1st Canadian Parachute Battalion in the Low Countries and in Germany Final Operations: (2 January–18 February and 24 March–5 May 1945*, by Captain R.D. Oglesky (Ottawa: Historical Section (GS) Army Headquarters, 27 October 1947), para 9. "Walking out" refers to soldiers leaving their garrison, hence the term "walking out dress."

27 Brian Nolan, *Airborne* (Toronto: Lester Publishing, 1995), pp. 124-125.

28 The men rejoined their companies and continued to serve with the Battalion.

29 Brian Nolan, *Airborne*, p. 127.

30 The decision to use the 6th Airborne Division in the Ardennes was a result of their being left out of Operation MARKET GARDEN (Montgomery's attempt to seize the bridges in Arnhem, Nijemegen, and Eindhoven). On 19 December, Montgomery was given command of all forces north of the German penetration and made the decision to reinforce his troops with the 6th Airborne Division, which was fresh in England.

31 Canada, *Report No. 17, The 1st Canadian Parachute Battalion in the Low Countries and in Germany Final Operations: 2 January–18 February and 24 March–5 May 1945,* by Captain R.D. Oglesky (Ottawa: Historical Section (GS) Army Headquarters, 27 October 1947), para 17.

32 The drop was to take place by daylight as well, although this was not a change from Operation MARKET GARDEN.

33 John A. Willes, *Out of the Clouds*, p. 121.

34 Brian Nolan, *Airborne,* p. 141.

35 The death of Lieutenant-Colonel Nicklin was revisited by Brian Nolan in his book *Airborne*. Nolan makes reference to rumours that are "troubling" and should be "finally laid to rest" with regard to whether or not the commanding officer was shot by his own men as a fallout to the hunger strike that had taken place in October 1944. In my own research I found no reference to the rumours that Nolan seems to suggest. In my interviews with veterans of the Battalion, and this drop, they were quite adamant that, though the commanding officer was not loved, he was respected, thought to be sound in battle, and the thought of such an assassination occurring was ludicrous. Lieutenant-Colonel Nicklin was shot by a German machine gun while he was hanging in a tree on the edge of the drop zone, this was witnessed by a Private Hoskins and is adduced from John Willes, *Out of the Clouds,* p. 129.

36 For a complete account of Corporal Topham's activities see John A. Willes, *Out of the Clouds,* p. 132.

37 The missing in action all occurred during the fighting in Normandy. Taken from Canada, *Report No. 17, The 1st Canadian Parachute Battalion in the Low Countries and in Germany Final Operations: (2 January–18 February and 24 March–5 May 1945,* by Captain R.D. Oglesky (Ottawa: Historical Section (GS) Army Headquarters, 27 October 1947), para 71.

38 Brian Nolan, *Airborne,* p. 179.

INTELLIGENCE SUPPORT TO OPERATIONS

"YOU GET WHAT YOU PAY FOR"

Major D. Villeneuve, CD

Canadian soldiers have been involved in more operations during the last decade than at any other period since the Korean War. Over the last ten years, battle group size organizations have been deployed in Cyprus, Somalia, Croatia, Bosnia, and Haiti, with rotations taking place at a rate previously unseen. These units were employed under the control of either the United Nations or NATO in Operations Other Than War (OOTW).[2]

Superficially, the need for military intelligence in support of these battle groups seemed to be minimal because they were not involved in fighting operations. The reality on the ground however, was quite different.[3] Military intelligence remained an important and vital element for a deployed battle group in OOTW. How well was that intelligence support provided? A review of the Post Operation Reports (PORs) from the Army Lessons Learned Centre revealed that, during most of the recent operational deployments, the intelligence provided was assessed as "accurate and timely."[4] The intent of this study is to look at the recent deployments to demonstrate that despite being reported as "adequate," flaws and deficiencies remain concerning the intelligence support provided to our troops. This study will show that intelligence support can be enhanced to better meet the needs of commanders and will outline some possible avenues for improvement. For those unfamiliar with military intelligence, Annex A contains a review of some basic concepts on the importance of intelligence and how it operates.

A REVIEW OF THE INTELLIGENCE SUPPORT PROVIDED DURING THE PAST DECADE

Highlighting Some Deficiencies and Concerns. The following are the main deficiencies and personal concerns that I have identified concerning the use of intelligence in OOTW during the last decade. These points are based on my own experience as an intelligence officer deployed on operations in the Western Sahara, Bosnia, and Haiti. These points are also based on numerous discussions with other intelligence officers who served in OOTW and from professional articles (mainly from American sources) written on the subject.

> *If you allow our intelligence manning and structure to remain at current levels or, even worse, reduce it, it is highly unlikely that we will realize any improvements in intelligence support in the coming years. You get what you pay for.[1]*

The reality of the Canadian Land Force is that it is an army comprised of battle groups.[5] This has proven to be the organization of choice when our military forces are deployed on operations. The organization is tailor-made for each deployment, depending on the assessed needs and tasks of the mission. As for intelligence support, the most common organization has been a section of six members under the command of a lieutenant or captain, depending on the view of the

commanding officer.[6] This organization was the standard for an infantry or armoured battalion operating in a conventional war environment during the Cold War. It became the de facto organization for battle groups deployed in OOTW. "If doctrine and history both supported the premise that infantry battalions would have their intelligence met sufficiently through the efforts of the higher brigade G2 staff, even this arrangement would remain acceptable. However, given the increasing pace of battle, the likely tactical environment, and the fact that battalions deploy without attendant brigade support, this premise is flawed."[7] The same can be said on the addition of Intelligence Branch personnel within the section or of maintaining the status quo. Some commanding officers were very open to the addition of Intelligence personnel, while others preferred to keep their combat arms members. It is my belief that the current organization is not strong enough to provide all the intelligence that should be produced.

To date, battle groups have been deployed as part of coalition efforts. Normally, they have been responsible for a sector or an area of operations, with little or no contact with the other units. This area was normally large, in fact, much larger than what doctrine dictates is appropriate for conventional war fighting. For example, the CANBAT 2 area of operations in Bosnia was some 900 square km.[8] In Haiti, the CANBAT was responsible for almost half the country. In addition to being responsible for larger areas of operations, there was little or no overlap in terms of intelligence responsibility and collection effort. All contingent

battle group areas of intelligence responsibility could best be described as isolated "bubbles." In its own area, a battle group was the only unit capable of collecting information. Therefore, it is important that battle groups be equipped to be self-sufficient in terms of dedicated collection assets. This reality is further amplified in the draft document Army Intelligence Strategic Restructuring: "Operations in concert with our Allies are increasingly 'come as you have' ventures. Deployment of Canadian … manoeuvre units can no longer depend on Allies providing the collection assets, fusion, and analytical capabilities or the means of dissemination and encrypted communication."[9] In short, if we want to have dedicated intelligence support, we have to bring it with us.

The reliability of the support that is provided by higher headquarters is very dependent on the type of organization under which the battle group is deployed.[10] The United Nations is renowned to be extremely inefficient in this regard. The United Nations Protection Force (UNPROFOR) is a typical example:

UNPROFOR headquarters did form an intelligence section … but in accordance with UN tradition it was weakly staffed and formed the smallest staff branch in the headquarters. Furthermore, in practice, it restricted itself to simply consolidating all the incoming unit situation reports in order to produce a daily summary for the Commander… In short, it was not doing military intelligence.[11]

Although the situation has improved somewhat with the current Stabilization Force (SFOR) deployment under NATO, battle groups cannot count on their higher field headquarters to fulfill the unit's intelligence requirements. This situation stresses the need for a battle group to be self-sufficient in getting its own intelligence since nobody else can provide it.

In terms of the sources of information available, United Nations and NATO deployments have demonstrated that Human Intelligence (HUMINT) has proven to be the primary source of collection activity. This is not to say that other sources like Imagery Intelligence (IMINT) or Signal Intelligence (SIGINT) do not have a role to play in such a theatre of operations, but HUMINT stands out clearly as the most promising source. The importance of HUMINT has been reported in numerous after-action reports both during UNPROFOR and SFOR in Bosnia,[12] and the same can be said for our Allies.[13] The importance of HUMINT leads to the conclusion that, in order to acquire this information; there is a need for the establishment of HUMINT debriefing teams to be integral to the organization of the battle group.

Recent deployments have demonstrated that battle group intelligence personnel are in contact with a large number of sources that are outside of their organization. "Within the on-going Bosnia deployment, for example, the battle group intelligence section is required to interact with a large number of Allied intelligence, reconnaissance, special operations forces, and humanitarian relief organizations, in addition to accessing national-level sources and agencies."[14] This situation is typical of all the other deployments of the last decade. Experience also demonstrates that, in this regard, the inclusion of Intelligence Branch personnel at the battle group level is beneficial. They have the necessary experience to exploit the vast number and variety of intelligence products available.[15]

To be of value, the collected information must be analyzed and placed in context; in other words, it must be processed.[16] Too often, unanalyzed data has been passed along the intelligence chain, leading to potential misinterpretations of the situation. Processing is a time consuming and

difficult job. The only way to overcome this deficiency is to have dedicated analysts as part of the intelligence staff.

One of the concerns pointed out by numerous PORs concerning intelligence support is what I call a "problem of education with the unit members." Reports from the 2 Canadian Mechanized Brigade Group (CMBG) Implementation Force (IFOR) rotation stated that "the information coming up from the unit intelligence sections was … marginal at best … These issues are generally centred on reporting from the company level. This is likely a training failure, in that the infantry soldiers are simply not used to reporting information."[17] It is interesting to note that this problem is not just typical of Canadian soldiers.[18]

There is another dimension attached to the training of soldiers. It is the role commanders at all levels play in the intelligence cycle. Without the support of the commanders, intelligence will get nowhere. It is my belief that the current officer training programs within the Army have shown deficiencies in this regard.

Assessing the Intelligence Support Provided. Intelligence is not a science. It is characterized by uncertainties and "best guess" propositions because it is never possible to have a complete intelligence picture. Consequently, it is difficult to assess the intelligence support provided with precision. Nevertheless, based on the deficiencies highlighted above, some conclusions can be drawn. First, the size and composition of the intelligence section deployed with a battle group can be improved. Second, a deployed battle group must be self-sufficient in term of integral collection assets, particularly concerning HUMINT. Finally, there is a need to better train the soldiers, from the commander all the way down to the private soldier, about their role in the intelligence cycle. From each one of these conclusions, there are some potential avenues for improvement.

IMPROVING INTELLIGENCE SUPPORT

Intelligence Section Organization. The organization of the current intelligence section does not provide efficient support to a deployed battle group. It is my view that to produce intelligence for a battle group deployed without a parent brigade in OOTW requires the same staff and effort that is found at the brigade group level. In other words, the same workload is required if you want to provide intelligence for an organization of 1000 soldiers or 5000 soldiers. Therefore, the efficiency of the section can be improved by increasing its size and including personnel from the Intelligence Branch.

The members of the intelligence section are responsible for the direction, processing, and dissemination phases of the intelligence cycle. As the cycle is continuous, there is a need for dedicated personnel to review and refocus the tasking of sources and agencies and to analyse the information received. To be done with efficiency, both are labour intensive, particularly if done on a 24/7 basis. Therefore, it is proposed that an intelligence section be composed of two groups: one dedicated to the collection of intelligence and the other dedicated to the processing and dissemination of intelligence. Annex B contains a proposal for the organization of a battle group intelligence section, which would greatly improve its efficiency.

The intelligence environment in which a deployed battle group operates is complex. There are numerous resources available both inside and outside the unit, ranging from local to national level and from military to humanitarian agencies. Consequently, it is reasonable to think that a battle group will expect the best possible soldiers to fill the intelligence staff positions. "Given the increasing amount of technical knowledge required to effectively exploit the intelligence system, professional intelligence personnel are therefore required within operationally deployed headquarters."[19] The major difference with the addition of Intelligence Branch personnel is in the level of experience they bring to the unit. Very often, they have worked at a strategic level and know what intelligence resources are available. As well, their level of experience allows them to better exploit the allied intelligence resources deployed in the theatre.[20]

Intelligence Branch personnel must be physically fit and consider themselves soldiers first and foremost. Without this, the integration within the unit will be difficult. As credibility is essential for intelligence personnel, a poor integration will be detrimental to the establishment of a good working relationship with the other unit members.

There is another dimension also attached to the inclusion of Intelligence Branch personnel with deployed battle groups: to "train as you fight." Currently, it is only during operational deployment that those units are augmented with Intelligence Branch members. In garrison, they are not augmented. Consequently, "combat arms units are not part of the intelligence architecture."[21] "Training for how you fight calls for integration of the intelligence staff now, before deployments."[22] Although it is not the intent of this study to discuss this subject further, it should be mentioned that it remains a vital, unresolved issue within the Army.[23]

Intelligence Sensors and Collection Assets Available to a Battle Group. A battle group can have the best intelligence staff but that will be useless unless it is provided with the best collection assets available. To produce intelligence, there is a need for the timely collection of information and data. Without timely collection, valuable intelligence cannot be produced to support the needs of the battle group.

It is important for a deployed battle group to be autonomous in terms of its collection assets. In this regard, there is no standard solution, as each deployment must be scrutinized separately to evaluate the needs. Some operations may require more HUMINT, while other more SIGINT. In addition, past operations have demonstrated that the UN is sensitive to the issue of collection assets and requires that only overt means be used. Nevertheless, a unit must have the tools to do the job. It must be understood that the best results are obtained when there is a redundancy of systems. Therefore, there is a need for more than just one type of collection asset. As HUMINT has proven to be the best source of information in OOTW, there is a need for the deployment of HUMINT debriefing teams with a battle group.[24] As well, SIGINT, IMINT,[25] Open-Source Intelligence (OSINT),[26] and Terrain analysis (TERA) must be examined to provide additional capabilities to a battle group.

The situation has improved considerably during the last ten years, and current trends lead us to believe that it will continue to do so. As we speak, "the Army is transitioning to the digital, multi-sensor, Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) environment."[27] This transition will provide the Army (down to manoeuvre units) with an unprecedented capability to collect data and information and will greatly improve battle group efficiency.

Role of the Unit Members Concerning Intelligence. Every member of a deployed battle group can play a role in the intelligence support to the unit. This is true from the commander to the private soldiers. It is important for the troops to learn that information can be gathered from different levels and that they be sensitized to the role they can play in building the intelligence picture.[28] Training tools must be developed to

increase the level of awareness among the soldiers in recognizing what they are seeing and in reporting it as expeditiously as possible. Annex C contains a two-day training syllabus developed by the U.S. Marine Corps to teach Marines to be aware of information that they might happen to come across on routine patrols.[29] This tool could be adopted by combat arms units of the Canadian Forces.

The role of the commander in the intelligence process is crucial. "The commander drives intelligence," is the first thing that American doctrine and articles say when they talk about intelligence.[30] The following quote is from an article in the *Marine Corps Gazette* reviewing lessons on intelligence from the Gulf War. The content of that article is quite relevant for today's Canadian army.

While the intelligence officer may be delegated the authority to conduct intelligence functions, the responsibility for the success or failure of intelligence rests with the commander. He, more than anyone else, needs to be personally involved in how intelligence is acquired, analysed, and disseminated within his unit. Commanders set the focus. From directing the information to be sought to allocating finite communications resources or ensuring a close operations / intelligence interface, the commander is in a key position to make intelligence work. His personal intercession with higher headquarters can ensure that a valuable collection asset is given priority to his unit. Within the staff the commander can dramatically influence the attitude toward the intelligence officer, either setting a tone of co-operation and respect or resistance and disdain. In modern warfare, a commander can shape and influence the battlefield, perhaps more than by any other means, through the acquisition and provision of quality intelligence to his warfighting elements."[31]

There is a need for the Canadian army to stress the critical impact the commander has in ensuring the provision of quality intelligence. If commanders pay lip service to intelligence support, the chances are small that meaningful intelligence will be provided when needed.

CONCLUSION

Military intelligence is an essential dimension of war and a force multiplier that battle group commanders must use to achieve success in OOTW. The support provided during the last decade had deficiencies in the size and composition of a battle group's intelligence section, the provision of sufficient integral collection assets for the unit to have autonomous collection capabilities, and in the role that the unit members (from the commanding officer down to the private soldier) played in the intelligence cycle. The bottom line with improving intelligence support remains with the attitude of commanders, unit members, and the Army as a whole. If the Army is serious about intelligence and takes a hard look at the support provided to our battle groups, then improvement will take place. If the Army is ambivalent about intelligence, then the situation will remain "adequate" and nothing will improve. You get what you pay for.

ANNEX A
INTELLIGENCE: SOME BASIC CONCEPTS

This review of some basic concepts about intelligence will help those unfamiliar with this field to get a better understanding of its role in operations. The importance of intelligence will be stressed first before giving a quick summary of how intelligence operates.

Importance of Intelligence. Although often neglected, intelligence remains a primary function of war. "The fundamental reason intelligence is so important and central a capability and therefore a primary function of war [or operation], is that intelligence is what makes going to and conducting war [operations] a rational act."[32] Units deployed on operations achieve success by being able to influence events at decisive times and places. To do this, a commander needs information, at a minimum, on his own troops, on how could third parties influence events, and on the capabilities and intentions of the warring factions (belligerents). Intelligence is what provides information on these last two points. Intelligence also predicts then verifies when and where those decisive points will be.[33]

Intelligence Cycle. Intelligence operates within a cycle composed of four phases: Direction, Collection, Processing, and Dissemination. This cycle is the process by which information is converted into intelligence. The cycle is repetitive because the need for intelligence is continuous throughout operations. The cycle is objective oriented; that is, intelligence production should

never be random but always produced to support decision-making. Finally, the four phases of the cycle are interdependent, with each element dependent on the other for meaning.[34]

The Direction phase determines what intelligence is required and who should collect it. It is important to note that "commanders drive intelligence," and that "intelligence drives operations." The raison d'être of intelligence is to support the requirements of the commander. The intelligence staff must translate the commander's requirements (Priority Intelligence Requirements) into a coordinated collection effort to available sources and agencies.

The collection phase obtains information by tasking sources and agencies. Two things must be kept in mind: "First, collection alone is not intelligence: analysis must be performed successfully. Second, … collection is best when it is multisource, some combination … from more than one collection element provides the best opportunity to support superior analysis."[35]

The Processing phase is where information is converted into intelligence. Processing is the central intelligence function. It is the most difficult, and therefore the most challenging part of the cycle.

Finally, the Dissemination phase passes the intelligence to those that need it. The best intelligence in the world is useless unless disseminated in time to those that require it.

To conclude, it must be emphasized that even when adequate, accurate, and timely intelligence is produced and disseminated, a decision maker must still make a proper decision. Intelligence by itself accomplishes nothing.

Annex B
Intelligence Section Organization: A Proposal

The following is a proposed intelligence section organization for a deployed battle group in OOTW. This organization was developed on the basis of a battle group intelligence officer being given carte blanche in regard to the organization of the section. Those positions that could be filled by Intelligence Branch personnel are shown in the remarks column.

	Position Title	Rank	Responsibilities	Remark
1	Intelligence Officer	Capt	Senior intelligence manager/advisor	Int Branch
2	Section Warrant Officer	WO	Coordination of section effort	Int Branch
3	Technical Assistant	Cpl	Final production / dissemination	
4	Int Operations Officer	Lt	Tasking of collection assets	Int Branch
5	Intelligence Collection Plan	Sgt	Tasking and debriefing of sources	Int Branch
6	Tasking of Collection Sources	MCpl	Tasking and debriefing of sources	
7	Open Source Collection	Cpl	Collection of information	Int Branch
8	Int Analysis Officer	Lt	Production of intelligence	
9	Analyst 1	Sgt	Processing of information	Int Branch
10	Collator 1	Cpl	Managing database	Int Branch
11	Analyst 2	Sgt/MCpl	Processing of information	
12	Collator 2	Cpl	Managing database	

Annex C
Basic Intelligence Training: A Proposal

The following is a two day training syllabus developed by the US Marine Corps to teach Marines to be aware of information that they might happen to come across on routine patrols and to report it as expeditiously as possible.[36]

DAY ONE. The first day is in class, where the members of a company receive information on topics such as technique of observation, vehicle and equipment recognition, how to report information (who, what, where, when, how), threat organization, and the role of intelligence. Members of the unit intelligence section would teach these topics to the soldiers.

DAY TWO. On the second day, the company would move into the training area and set up a defensive perimeter. Once this is established, section-sized patrols would depart in succession to go through the following stations:

✦ STATION 1. Depart friendly forward line. Tasks tested: use of challenge and password; correct departure procedure.

✦ STATION 2. The patrol encounters a friendly foreign national, who says he has information on the enemy. Tasks tested: screen the individual in accordance with rules of engagement; report the information; follow direction from headquarters.

✦ STATION 3. The friendly foreign national leads the patrol to a vantage point overlooking an enemy supply cache. Tasks tested: report procedures.

✦ STATION 4. The patrol receives a fragmentary order to provide information on an aspect of the local terrain (bridge, road condition, etc). Tasks tested: react to new directives; reach designated location; provide requested information.

✦ STATION 5. The patrol, while moving away from the terrain analysis site, conducts a hasty ambush against three enemy personnel. Tasks tested: conduct ambush; search bodies; recover document; submit report.

✦ STATION 6. The patrol observes several enemy vehicles from a distance. Tasks tested: vehicle identification and proper report.

✦ STATION 7. The patrol captures four enemy personnel of various ranks. Tasks tested: proper prisoner of war procedures.

✦ STATION 8. The patrol re-enters friendly lines. Tasks tested: challenge and password/entry procedures and turnover of prisoners.

✦ STATION 9. Debrief of the patrol by the unit intelligence officer. Tasks tested: turnover of document and answer questions.

About the Author . . .

Major Villeneuve is currently serving in Bosnia. Unfortunately, this has made it impossible to include his biography at this time. An effort will be made to include this information in a later issue.

Endnotes

1 Major Russell Keller, "Intelligence is a Team Sport," *Marine Corps Gazette*, Volume 76, Number 3 (March 1992), p. 17. Following the Gulf War, the Marines Corps addressed the effectiveness of its intelligence by a series of articles in their publication *Marine Corps Gazette*. Similarities and valuable lessons for the Canadian army can be extracted from these articles.

2 Canada, Department of National Defence, B-GL-300-000/FP-000, *Canada's Army*, (Ottawa, February 1998), pp. 73-74. The security environment within which nations interact can be depicted as a spectrum of conflict, which ranges from peace at one end to total war at the other.

	PEACE	CONFLICT	WAR
STRATEGIC MILITARY RESPONSE	OPERATION OTHER THAN WAR		
			WARFIGHTING
OPERATIONAL MILITARY MEANS	NON–COMBAT OPERATIONS		
		COMBAT OPERATIONS	

The strategic military response in conditions of peace and conflict is operations other than war (OOTW). OOTW are very broad in scope and, for the Canadian army, range from assistance to civil authorities at home to peace enforcement operations abroad. The requirement to be able to conduct combat and non-combat operations, often simultaneously, characterizes OOTW.

3   To provide a few examples: Canadian soldiers were involved in the largest firefight since Korea in the Medac pocket in Croatia in 1993. On many occasions, Canadians soldiers were taken hostages by one of the warring factions in Bosnia. In the summer of 1995, both Canadian battalions deployed in Croatia and Bosnia found themselves in the middle of large-scale military operations launched by one of the warring factions. In Bosnia, it was a Muslim offensive to open Sarajevo. In Croatia, it was a Croatian offensive to capture the Krajinas. On almost every deployment in Croatia, Bosnia, and Somalia, soldiers were involved in a firefight or shot at by the warring factions.

4   The Army Lessons Learned Centre, *Information Warehouse*, Version 8 (December 1998). I reviewed the Post Operations Reports (POR) for OP CAVALIER (Bosnia, UNPROFOR), OP HARMONY (Croatia, UNPROFOR), OP MANDARIN (Logistic support Croatia and Bosnia, UNPROFOR), OP ALLIANCE (Bosnia, IFOR), OP PALLADIUM (Bosnia, SFOR), and OP STANDARD/STABLE/CONSTABLE (Haiti, UN). It must be mentioned that the amount of information describing the intelligence support provided was minimal. Very often, it was summarized in one or two sentences. In short, almost all the reports mentioned that the intelligence support provided was generally good. In a few reports, some flaws and deficiencies were also mentioned. There was no reference to say if any actions were taken to correct these flaws and deficiencies. It is also interesting to note that there was no consolidated report about the intelligence support provided covering all the operations of the last decade.

5   Major Hoag, "CCIS Application," Canadian Land Force Command and Staff College, Kingston Ontario, 23 February 1999. This briefing clearly expressed this reality of the Canadian Forces.

6   Author's experience.

7   Robert Martyn, p. 42. This article shows that the current tactical intelligence situation has changed. It provides an overview of the evolving conflict environment and CF responses. It also provides some possible avenues for improving tactical intelligence in this new world reality.

8   Author's experience.

9   Army Land Force Staff (DLFR-4), *Army Intelligence Restructuring* (Draft copy, Ottawa: 1999), p. 7-12. This draft document addresses the current issue of the Army intelligence architecture. It provides architecture options to best support Army intelligence force generation and readiness in the post-Op ABACUS environment.

10 Major General John Stewart, "Intelligence Strategy for the 21st Century," *Military Review*, Volume LXXV, Number 5 (September–October 1995), p. 80. The problem of providing the adequate level of intelligence all the way down to the unit level is not a problem typically Canadian and unique to OOTW. In his article, Major General Stewart mentions that "Intelligence did extremely well in *Desert Storm*. We had great intelligence at the army and corps levels and did pretty well getting that intelligence down to division level. However, we did not do a great job of getting intelligence down to the brigade." This led the U.S. Army to review how it operates in order to rectify this deficiency.

11 Paul Johnston, "No Cloak and Dagger Required: Intelligence Support to UN Peacekeeping," *Intelligence and National Security*, Volume 12, Number 4 (October 1997), p. 109. For additional reading about UN and intelligence see:

a. Major Raymond J. Leach, "Information Support to U.N. forces," *Marine Corps Gazette*, Volume 78, Number 9 (September 1994), pp. 49-50. This article provides an American point of view on this issue based on the author's experience in Macedonia;

b. Richard A. Best, Jr., "Maintien de la Paix: Besoins en renseignement," *Rapport du CRS à l'intention du Congrès*. Congressional Research Service – Library of Congress (May 1994);

c. David Ramsbotham, "Analysis and Assessment for Peacekeeping Operations," *Intelligence and National security*, Volume 10, Number 4 (October 1995), pp. 162-174; and

d. Hugh Smith, "Intelligence and UN Peacekeeping," *Survival*, Volume 36, Number 3 (Autumn 1994), pp. 174-192.

12 This is based on the author's experience. It is also expressed in Robert Martyn's article, "Trends in Tactical Intelligence" in *The Army Doctrine and Training Bulletin*, Volume 1, No. 2, November 1998.

13   Here are a few examples concerning our Allies:

a. American experience.

(1)   Somalia. Captain David Rababy, "Intelligence Support During a Humanitarian Mission," *Marine Corps Gazette*, Volume 79, Number 2 (February 1995), p. 40. "Our robust HUMINT capability has provided in-by-nine, out-by-five [service] on priority intelligence requirements. This accounts, in some measure, for our low casualty rate."

(2)   Bosnia. Lieutenant Colonel George K. Gramer, "Operation JOINT ENDEAVOR: Combined-Joint Intelligence in Peace Enforcement Operations," *Military Intelligence*, Volume 22, Number 4 (October – December 1996), p. 13. "Human Intelligence (HUMINT) was clearly the number one collector in theatre. Nearly one hundred percent of the information in the Allied Rapid Reaction Corps (ARRC) INTSUM was from HUMINT collection."

(3)   Haiti. Michael W. Schellhammer, "Lessons from Operation Restore Democracy," *Military Intelligence*, Volume 22, Number 1 (January–March 1996), p. 19. "In Haiti, HUMINT dominated the collection. HUMINT consistently provided reliable information on enemy and civilian attitudes and intentions";

b. Australian experience. Australia. *Case Studies Package —Exercise Rainbow Serpent 1998* (October 1998). Page 3 of their "operational analysis summary on guiding lessons for multi-national peace operations in the near region." During the Operations SOLACE (SOMALIA), TAMAR, and LAGOON (Bougainville), the Australians reported that almost 90% of their exploitable intelligence was provided by HUMINT sources; and

c. During my tour in Bosnia in 1995, I was on a regular contact with French and British forces HUMINT debriefing teams. A team was composed of two or three members, responsible to collect information from human sources of every description, ranging from local population, passing by UN soldiers, to humanitarian agencies workers.

14 Robert Martyn, "Trends in Tactical Intelligence," *Army Doctrine and Training Bulletin*, Volume 1, Number 2 (November 1998), p. 43.

Major D. Villeneuve

15   Author's experience. In this regard, it is interesting to note that the US Marine Corps has implemented the inclusion of professional intelligence personnel within its units. The Marine Corps has found that dedicated intelligence staff has a greater knowledge of national-level sources that are available to be tapped. For more details, see Major General Harry W. Jenkins Jr, "Tactical Intelligence and Related Activities: Report from the Director of Intelligence," *Marine Corps Gazette*, Volume 76, Number 9 (September 1992), pp. 14-18.

16   Major David L. Shelton, "Intelligence lessons known and revealed during Operation RESTORE HOPE Somalia," *Marine Corps Gazette*, Volume 79, Number 2 (February 1995), p. 39. The Americans came to a similar conclusion during their Operation in Somalia. "All the intelligence effort is of little value if it cannot provide the commander with a reasonably accurate picture of what's occurring in and near his area of operations. . . . Thus, the analytical section must become the very heart of the entire information process and must be capable to receiving, collating, evaluating, and presenting a best assessment to the commander." In addition, James Finley mentions in his article "Nobody Likes to be Surprised: Intelligence failures" (*Military Intelligence*, Volume 20, Number 1 [January–March 1994], p. 14) many reasons to explain how intelligence can fail. The lessons learned reflect problems with the information received, the intelligence process, and the judgement of the intelligence personnel. In regard to the information received, Finley talks about too much information of conflicting, unreliable, and ambiguous data. The solution to overcome this is an improved analysis capability.

17   Martyn, p. 42.

18   Major Roger Marshall, "Operation GRAPPLE: British Armed Forces in Unites Nations Protection Force," *Military Intelligence*, Volume 22, Number 4 (October – December 1996), p. 58. The British, for example, learned the same lesson in Bosnia under UNPROFOR. In an article published in the *Military Intelligence Bulletin*, Major Marshall mentioned that among the lessons learned, situation awareness and information reporting was a problem. "Even the 'mail run' might pass the faction reinforcement convoy travelling otherwise unseen. Everyone must know the importance of reporting and how to do it."

19   Martyn, p. 42.

20   This is based on my personal experience. As well, Robert Martyn in his article, "Trends in Tactical Intelligence," discusses this question at length.

21   Army Land Force Staff (DLFR-4), *Army Intelligence Restructuring* (Draft copy, Ottawa: 1999), pp. 4-12.

22   Martyn, p. 43.

23   For further reading, I recommend Major Charles E. Colvard's article, "Consolidating intelligence assets and creating combat-arms S-2," *Marine Corps Gazette*, Volume 76, Number 9 (September 1992), pp. 22-25. This article discusses the US Marines Corps issue on integrating professional intelligence personnel down to battalion level. In addition, see "On the Future of Intelligence in the Canadian Infantry," *Infantry Journal*, Volume 32 (Summer 1997), pp. 16-24. This article explored in details the rationale for including intelligence personnel down to combat arms unit-level.

24   Currently, the Canadian Forces are involved with HUMINT support to operations in two ways. First, by providing individual reinforcements to SFOR multi-national collection battalion. Second, by deploying counter-intelligence teams to Canadian contingent. These teams are composed of military police personnel. Although these initiatives are a step in the right direction, there is still a capability gap at the battle group level that needs to be filled.

25   IMINT includes both air and hand held imagery. In regard to hand held imagery, the digital camera technology is opening new possibilities for IMINT. A battle group could be augmented by a team of "combat photographers" that uses the digital camera and the lap top computer to transmit imagery taken on the ground to the unit headquarters within minutes. A demonstration of this capability was given to the participants of the 1997 ACORN (Army intelligence) Conference in Ottawa (February 1997).

26   Richard Riccadelli, "The Information and Intelligence Revolution," *Military Review*, Volume LXXV, Number 5 (September–October 1995), p. 86. "Open-source intelligence will prove an invaluable information warfare tool. Access to media and people networks will add a new dimension, as well as a new danger to future operations". High on the list of available OSINT sources is INTERNET. A skilled and systematic use of it can provide a large quantity of valuable information. To be useful, there is a need for someone to be dedicated to surf the net.

27   Army Land Force Staff (DLFR-4), *Army Intelligence Restructuring* (Draft copy, Ottawa: 1999), p. 2.

28   Information could come from the unit commanding officer meeting one of the warring factions local commanders, a liaison officer meeting a belligerent counterpart, a soldier at an observation post talking with a local soldier performing the similar guard duty, or a cook in the kitchen chatting with a local employees.

29   Sergeant John R. Murphy, "Basic Intelligence Training," *Marine Corps Gazette*, Volume 75, Number 9 (September 1991), pp. 26-27.

30   Numerous articles and doctrine manuals make reference to the concept of "Commander driving intelligence." I recommend reading the following two documents :

a.   John F. Lady III, "How the Commander drives Intelligence," *Military Review*, Volume LXXVI, Number 3 (May-June 1996), pp. 82-87; and

b.   United States, Department of the Army, FM 34-8, *Combat Commander's Handbook on Intelligence* (July 1992).

31   Keller, p. 17.

32   Lloyd Hoffman, "Intelligence, Military," *Bassey's Encyclopedia of the Land Forces and Warfare* (printed in the United States of America, 1996), p. 511.

33   United States, Department of the Army, FM 34-8, *Combat Commander's Handbook on Intelligence* (July 1992), p. 1-1.

34   Hoffman, p. 509.

35   Hoffman, pp. 509-510.

36   Murphy, pp. 26-27. I have summarized the main points from this article.

D+20 000

STILL FIGHTING THE NORMANDY CAMPAIGN

Captain Paul Johnston, CD

Interest in the Normandy campaign, especially amongst Canadian Forces members, has always been strong, and it has been recently reinvigorated by the release of the impressive movie *Saving Private Ryan*. But general readers, who are eager simply to learn what happened and perhaps marvel at the drama of great events, are sometimes surprised to discover that historians still argue about the Normandy campaign. We did win after all, didn't we? Contrary to the old saw, hindsight is not 20-20; simply establishing what happened is very different from understanding. The furor over the Normandy episode of the CBC series *The Valour and the Horror* vividly showed this. While that (in)famous television series may not be the best history of the campaign, there *are* many historical controversies and disputes amongst military historians.

This article is not another potted history of D-Day and the Normandy campaign. Rather, it is an overview of the ongoing controversies and a guide to the more prominent of the historical works available. Hopefully this will put the literature available into context for the general reader, for nearly any work that one chooses comes loaded with baggage from some school of thought.

GENERAL OVERVIEW

One of the first general overviews written about the campaign—*The Struggle for Europe* by the journalist Chester Wilmot, first published in 1954[2]—has held up surprisingly well. It is still cited approvingly by historians.[3] The official histories are also still an excellent place to start, although as is the case with all official

histories, they tend to shy away from controversy and focus on a narrative description of the campaign. This is perhaps especially true of the British official history. First out were the American official histories *Cross-Channel Attack*[4] in 1951 and *Breakout and Pursuit, United States Army in World War II, The European Theatre of Operations*[5] in 1961. Next year the British official history *Victory in the West* Volume I *The Battle of Normandy*[6] appeared. The Canadian official history *The Victory Campaign: The Operations in North-West Europe, 1944-1945*[7] was published four years later.

> *The history of the Second World War has not yet been written.*
>
> **—John Keegan**[1]

It should be noted that all of these were written before ULTRA (the Allied breaking of the high level German codes) was declassified, so they do not reflect the significance of that intelligence to Allied decision making. For the story of ULTRA, see *ULTRA in the West: The Normandy Campaign 1944–45*[8] by Ralph Bennett. Avoid P.W. Winterbotham's earlier account, *The ULTRA Secret,*[9] which first broke the story but was written from memory. Bennett, who had access to declassified ULTRA files, gives a definitive account and demonstrates that several of Winterbotham's claims must be muddled.[10]

More recent British histories of note include John Keegan's *Six Armies in Normandy*[11] and Max Hastings'

OVERLORD: D-Day and the Battle for Normandy, 1944.[12] Keegan, long a professor of military history at Sandhurst, is one of the most prominent military historians alive. Hastings is actually a journalist and author rather than an academic, but perhaps that makes his well-received works more readable.

A classic history of D-Day itself (although not of the subsequent campaign in Normandy) is Cornelius Ryan's *The Longest Day*.[13] Ryan is another journalist/author (this time American) who does not really attempt any historical analysis. He does, however, tell a gripping tale focusing on the personal experiences of a large cross-section of the participants, and his book is thoroughly researched. One of the prominent current US historians of the campaign is Stephen Ambrose, whose *D-Day June 6, 1944: The Climactic Battle of World War II*[14] was used extensively as a reference for the recent movie *Saving Private Ryan*. Ambrose is a professor at the University of New Orleans and Director of the American National D-Day Museum in New Orleans.

The definitive recent work on the Canadian Army in Normandy is Jack English's *The Canadian Army in the Normandy Campaign: A Failure in High Command*.[15] English, a retired Canadian lieutenant-colonel and former Directing Staff at Kingston, is now a full-time academic. Other recent works of note include Reginald Roy's *1944: The Canadians in Normandy* (which is generally a straightforward narrative but does not shy away from criticism), *Bloody Victory*[16] and *Maple Leaf*

Captain Paul Johnston

Route: Caen and *Falaise*.[17] The latter three are more populist accounts.

Unquestionably the best scholarly analysis of the campaign overall is Carlo D'Este's *Decision in Normandy*.[18] D'Este is another retired lieutenant-colonel from the US Army, and he now spends his time researching and writing Second World War military history.

ALLIED VERSUS GERMAN FIGHTING POWER

The major debate amongst historians of the Normandy campaign has been why it took the Allies so long to break out and what this says about the relative quality of the German and Allied armies. The literature on this issue is considerable. Max Hastings, for instance, argues that "the German army was the outstanding fighting force of the Second World War, and it could be defeated by Allied soldiers only under the most overwhelmingly favourable conditions."[19] These charges are repeated more generally by John Ellis in *Brute Force*,[20] a study of the Allies' overall war effort which concludes that it was only by weight of firepower and material that the Allies were ever able to push back the German military. Retired US Army Colonel Trevor DuPuy has even gone so far as attempt exhaustive mathematical modeling of German and Allied battlefield performance, concluding that the Germans were 20-30 percent more effective man for man.[21] In a similar vein, noted Israeli military historian and theorist Martin van Creveld has argued that the German Army was organized from the ground up for generating what he terms "fighting power," as compared with Western armies (in particular the US Army), which were organized simply to marshal men, materiel, and firepower.[22] A perhaps contentious but certainly fascinating survey of this whole issue was attempted in the series *Military Effectiveness*, edited by Allan Millet and Williamson Murray. Volume Three, *The Second World War*,[23] gives high marks to the Germans and mediocre ones to the Allies.

In the Canadian context, something of this attitude even appeared in the original official history, in which C.P. Stacey concluded that "man for man and unit for unit, it cannot be said that it was by tactical superiority that we [i.e., the Canadian Army] won the Battle of Normandy."[24] Stacey delicately attributed this to the Canadian formations' "inexperience in battle" and (now somewhat infamously) unit level officers "who were not fully competent."[25] This remained the general view until Jack English's analysis of the Canadian Army's performance in Normandy. As his title implies, English blamed not the troops or unit level leadership, but the higher command, and this interpretation quickly became the new standard view. Nevertheless, wherever blame is placed, all of these interpretations share the view that, man-for-man, "the Germans consistently outfought the far more numerous Allied armies that eventually overwhelmed them."[26]

Recently, something of a counter-movement has developed, arguing that Allied performance was no worse than the German. Examples in the US include Stephen Ambrose's *Citizen Soldiers*[27] and John Balkoski's *Beyond the Beachead*.[28] In Canada, noted military historian Terry Copp, for one, has called for "a new analysis" of the Normandy campaign. Pointing out that in Normandy *both* sides suffered heavy casualties for paltry gains whenever attempting offensive operations, Professor Copp argues that it was the simple fact that the Allies were the ones doing most of the attacking that makes them look less tactically elegant.[29]

MONTY

Controversy about Montgomery's generalship in Normandy began in the newspapers while the fighting was underway and does not appear to have slackened since.[30] In part this is an extension of the larger debate over the relative quality of the German and Allied fighting quality, because throughout the campaign Montgomery was the overall Allied ground commander. This debate centres mostly around Caen, the Allied failure to capture it as planned on D-Day itself (it actually took over a month) and whether or not the subsequent campaign went according to Monty's "master plan."

Quick off the mark, Montgomery presented his version of events to the Royal United Services Institute in October 1945.[31] This was followed in 1958 by his memoirs, in which he explains "I never once had cause or reason to alter my master plan."[32] Prominent works from what has been called the "21st Army Group School of History" include *Victory in Normandy*,[33] by Montgomery's former chief of operations, and Nigel Hamilton's official biography.[34] Both give the pro-Monty view that everything went according to plan, albeit a little behind schedule. In this view, Montgomery's real aim was not to capture Caen per se—much less achieve a breakout past Caen—but to pin down German armour, so as to give the Americans a chance to break out on the right flank, as indeed they eventually did.

Most recent historians have been unimpressed with these claims. D'Este's masterful *Decision in Normandy* is in large part a study of how Montgomery lost control of the campaign, and then achieved an encirclement of the German 7th Army almost despite himself.

THE FALAISE GAP

Perhaps even more hotly contested than the delay in capturing Caen are the arguments over the delay in closing the Falaise "gap," through which a considerable portion of the German 7th Army and Panzer Group Eberbach escaped to fight another day. Was this inevitable? Could the German 7th Army have been captured and forced to

surrender as the 6th Army had been at Stalingrad? This question is especially pertinent in Canada, as First Canadian Army formed the troops of the northern pincer. Jack English has speculated that if First Canadian Army's initial drive to close the gap (Operation TOTALIZE) had been successful, the Canadians might have "as in 1918, spearheaded the British Army's advance into the heartland of Europe," a success even greater than Vimy Ridge that would have lead to untold Canadian prominence in an early end to the war.[35] However, TOTALIZE is generally today considered a missed opportunity. C.P. Stacey somewhat mournfully noted in the official history that "a German force far smaller than our own ... was able to slow our advance to the point where considerable German forces made their escape."[36] A more sympathetic recent account that considers TOTALIZE a success is *A Fine Night For Tanks*.[37] One of TOTALIZE's most astringent critics is Roman Jarymowycz, a reserve officer who recently finished his doctoral dissertation at McGill on armoured combat in Normandy.[38] In the end, the First Canadian Army did eventually close the gap (with Major Currie of the South Alberta Regiment winning a famous Victoria Cross at Trun in the process) but by then most of the remaining Germans had escaped from encirclement.

THE EFFECT OF AIR POWER

Traditionally, most commentators have described Allied air supremacy in Normandy as crushing, concluding that it doomed the Germans. Amongst historians, Chester Wilmot made this point early: "The value of this air supremacy can hardly be overrated."[39] He is seconded in this opinion by virtually all of the Germans who fought in the campaign.[40]

However, as Hastings notes in his history of the Normandy campaign, the cliché that air power defeated German intentions in Normandy demands careful

examination.[41] Despite the Allies' clear superiority in the air, no German formations sent to the Norman battlefront failed to arrive as formidable fighting organizations, none collapsed for want of supply, none were unable to execute the manoeuvres ordered of them, and, despite several massive efforts, air power never once broke open the German front. In fact, a more recent body of scholarly literature has grown up, dedicated to discrediting some of the more over-blown claims for air power in Normandy.[42]

For their part, air historians of the Second World War tend to focus upon either the undying controversy over the strategic bombing campaign or the glory days of the Battle of Britain. Although some valuable general work has been done (in particular, by Richard Hallion,[43] David Spires,[44] W.A. Jacobs,[45] and Benjamin Cooling[46]), until Ian Gooderson published *Air Power at the Battlefront*,[47] little rigorous analysis of tactical air power's specific effects was ever written. A definitive analysis of the effect of Allied tactical air power on the Normandy campaign specifically has yet to be produced. Such a work would have to draw upon German records to cross-reference Allied intentions and mission planning with the actual effects on German units. While it is clear that much German movement and supply was harassed and delayed, it is equally clear that the Germans were able to move large panzer forces when and where they chose— as they did, for instance, when they shifted four panzer divisions to the US sector for their attempted counter-attack at Mortain.

Closely related are the questions about the strategic bombers. Initially, the senior commanders of the heavy bombing forces strongly resisted what they considered "diversion" from strategic attacks on Germany to support OVERLORD. Convinced that strategic bombing alone could bring German capitulation, the more extreme bombing

advocates even considered a land invasion unnecessary, if not downright irresponsible. The strategic bombing forces were not placed under Eisenhower's authority until two months before D-Day, and even then they continued their campaign against Germany concurrently, which lead to some disagreements about priorities. The "bomber barons" side of the story is told in the memoirs of Sir Arthur Harris,[48] and in *The Air Plan That Defeat Hitler*[49] by retired US Army Air Force general Haywood S. Hansell Jr. In more recent scholarship, John Terraine treats this issue in some depth in his masterful survey of the Royal Air Force in the Second World War, *The Right of the Line*.[50]

Even when finally committed to OVERLORD, disputes did not end. Most of the pre-invasion heavy bombing was intended to isolate Normandy so as to slow the movement of German reserves and reinforcements to the landing area. However, there was a fierce controversy about the best means to effect such an aim–should bombing concentrate upon rail yards or bridges and sections of track? Arguing for rail yards was Solly Zuckerman, a pre-war zoologist who became an expert on targeting. His autobiography is perhaps one of the best to come out of the war.[51] W.W. Rostow's *Pre-Invasion Bombing Strategy*[52] represents the argument for bridges. Eisenhower eventually sided with the railyards plan.

Unquestionably the most controversial aspect of the heavy bombers' role in OVERLORD was their eventual utilization in direct support of attacking troops, conducting "carpet-bombing" of German front-line positions. This resulted in the devastation of Caen, and there were several infamous incidents of bombing short and hitting Allied troops. The commander of 3rd Canadian Infantry Division, Major-General Keller, was wounded in this fashion at the opening

of Operation TOTALIZE. Most historians have concluded that heavy bombers were poorly suited to the close support role.[53]

PRISONERS AND ATROCITIES

The Canadian Army in Normandy and the *Waffen-SS* (in particular, the *12th SS Panzer Division Hitler Jugend*) spent much of the bitterest fighting facing each other. Mutual animosity, somewhat extreme even by the standards of the campaign, appears to have quickly developed between the Canadians and *Waffen-SS*. The SS committed numerous atrocities in Normandy, most infamously killing several Canadian prisoners at the Abbaye Ardenne.[54] The whole issue of SS war crimes in Normandy is the subject of a recent book by Howard Margolian, a former investigator for the War Crimes unit of the Department of Justice of Canada.[55] *Meeting of Generals*,[56] an account of the post-war trial arising from the Abbaye Ardenne incident and the life story of the participants on both sides, is an even-handed and eminently readable book. More contentious for Canadian readers are occasional allusions to, and some outright accusations of, killing of German prisoners by Canadian troops.[57] While individual Canadian troops may have committed a few war crimes, there can be no doubt that it was the *Waffen-SS* who made it a feature of their practice, killing a total of almost 150 Canadian prisoners throughout the course of the campaign.

Unquestionably the worst single atrocity of the campaign was perpetrated by the *2nd SS Panzer Division Das Reich*. Its approach march to the front was dogged by the French resistance. The SS men picked a small village (Oradour sur Glane), massacred its several hundred inhabitants, and burned the place to the ground as retribution and an example.[58]

MANPOWER SHORTAGES

The fighting in Normandy was some of the bitterest and most intense in history.

Distinguished British historian Correlli Barnett likens the Normandy campaign to "Passchendale plus tanks and air power."[59] One of the consequences of this bitter fighting was a loss rate amongst the Allied infantry vastly higher than anticipated, leading to what became a critical shortage of infantry in the British and Commonwealth armies. The British, drained by their enormous sacrifice in the Great War and stretched then with commitments around the globe, were acutely conscious of loss rates. The First Canadian Army too, with the conscription crisis at home, faced a manpower crunch. How important was this? The manpower shortage has been invoked as a critical limiting factor in Montgomery's calculations as he struggled to reach Caen and then breakout beyond. Many historians believe that this, at root, lies behind the somewhat unconventional decision in Operation GOODWOOD to attempt the breakthrough with armoured rather than infantry divisions.

Cave ab homine unius libri,
"Beware the man of one book."

—Latin proverb

Carlo D'Este devotes an entire chapter of his masterful *Decision in Normandy* to "The Manpower Dilemma," suggesting that the whole thing was a "myth."[60] D'Este concludes that 21st Army Group itself was indeed desperately short of infantry replacements, but he calculates that there were 100 000 infantry replacements available in the British Isles alone and questions why they were not made immediately available. Were they, he speculates, held back by Churchill so as to have a reserve in the British Isles in the event of OVERLORD's failure on the continent? Certainly, in 1940, RAF fighters were held back from France for just this reason. D'Este reaches no firm papers appear to be missing from the conclusions, noting that the relevant archives.

COMMAND DISAGREEMENTS

Many, if not all, of the historiographical controversies described above began as disputes between rival schools of thought amongst the Allied senior leaders themselves. Indeed, the whole campaign was marked by frequent acrimony among key Allied commanders. This theme forms the subject of *The War Between the Generals*[61] by David Irving, the maverick British historian who is something of a controversialist.[62] Monty, in particular, appears to have had trouble getting on with everyone else. His relations with Eisenhower (whom he appeared to consider an amateur at strategy and operational command) forms a centre piece of *Eisenhower's Lieutenants* by Russell Weigley.[63] Weigley, an eminent American historian, is fairhanded but ultimately sympathetic with Eisenhower. Monty's side of the story is found in his memoirs and, in particular, in Hamilton's biography, which has some downright vicious things to say about his critics.

Discord was particularly marked between the senior air commanders. Once again, Montgomery did not get on with any of them, except perhaps the Allied Expeditionary Air Forces commander Air Chief Marshal Sir Trafford Leigh-Mallory, and even in his and once remarked that he was a "gutless bugger."[64] One of Montgomery's fiercest critics was Eisenhower's Deputy Supreme Commander, RAF Air Chief Marshal Sir Arthur Tedder, who actually lobbied Churchill for Monty's dismissal after GOODWOOD.[65] But the air commanders were divided amongst themselves as well, squabbling over their chain of command and the proper employment of the Allies' considerable tactical and strategic air power. D'Este devotes another entire chapter to this issue.[66]

THE GERMAN POINT OF VIEW

We still lack a good history of the campaign from the German point of view, one with the analytical depth and firm grounding in the primary sources of, say, Carlo D'Este's *Decision in Normandy* or Jack English's study of the Canadian Army in Normandy. Almost all of the historical study of the campaign has been based upon trolling and retrolling the Allies' archives down to unit level. As a result, most of the seminal works on the campaign are devoted to the questions described above—infighting within the senior Allied leadership, why it took so long to reach Caen and close the Falaise gap, and how good the Allied armies really were.

A clutch of German books, available in English translation, were published in the 1950s and 1960s, but they are all either memoirs or semi-journalistic re-tellings of the story rather than scholarly analyses. Particularly noteworthy is Paul Carell's *Invasion*,[67] a popular history of the campaign based upon many personal interviews rather in the style of Cornelius Ryan's *The Longest Day*.

There are various memoirs from key participants on the German side, including Rommel's chief of staff[68] and his naval advisor and confidant.[69] Von Rundstedt's chief of staff has written a biography of his erstwhile commander.[70] Rommel's own papers—edited by B.H. Liddell Hart—were published in 1953.[71] Also from Liddell Hart is *The Other Side of the Hill*,[72] which is based upon his extensive interviews with captured German generals after the war. Colonel Hans von Luck, who caused a great deal of difficulty for 21st Army Group, has also published his memoirs in English.[73]

The individual German soldier's experience in Normandy is the subject of *The Battle of Normandy: The Falaise Gap*, by James Lucas and James Barker.[74] Mathew Cooper's classic higher-level study of the German Army overall, *The German Army 1939-1945*,[75] treats the Normandy campaign in some detail. More recently, Samuel Mitcham has produced a biography of Rommel in Normandy,[76] and the retired British Army officer Kenneth Macksey has produced a paean to the fighting power of the *Waffen SS* in Normandy,[77] but neither give an overview of the German effort throughout the campaign. Mitcham's biography of Rommel is particularly biased in favour of its subject and based almost exclusively upon secondary sources. One German work of particular interest to Canadians is Craig Luther's history of the 12th SS Hitler Youth Division.[78]

> *Those who seek to be students of military history–in particular, serving military professionals–would do well to keep the larger framework of the debate in mind before they crack open any one particular book.*

"THE LONGEST DAY": WAS ROMMEL RIGHT?

Perhaps the most prominent controversy on the German side includes Rommel and his role in the German planning for the campaign. In the months before D-Day, there was a split within the German high command over the correct strategy. The elderly Field Marshal von Rundstedt, overall commander in the West, favoured the traditional German approach of an elastic defence in depth. He wanted to hold the Atlantic wall defences with lower-grade, static units only on the grounds that no matter what the Germans did, an Allied landing could never be prevented entirely. Far better, he believed, to hold the main German strength—in particular, the mobile troops such as the panzer divisions—in central reserve. They could then counter-attack the Allied forces once it was clear where they were landing in strength. After all, manoeuvre warfare was the German forté.

Rommel, on the other hand, commanding Army Group B, argued for a forward defence based on the beaches themselves. He believed that in the face of Allied air power, the Germans would be unable to successfully manoeuvre large forces and that the battle would be won or lost on the beaches.[79] He thus argued for the exact opposite disposition of German forces from von Rundstedt—forward deployment of the mobile and panzer divisions, just behind the potential invasion beaches themselves.[80]

Who was right and who was wrong in this dispute is still debated. In any event, neither Rommel nor von Rundstedt got what they wanted.[81] The dispute escalated all the way to Hitler, and he produced a compromise, putting some of the panzers under Rommel for an immediate reserve and some of them in a central reserve—but under his and not von Rundstedt's control. A key issue would have been where the Germans were expecting the invasion to come. Highly effective Allied deception schemes (known as Operation FORTITUDE) had largely convinced the Germans—certainly von Rundstedt—that the invasion was coming across the shortest part of the channel at the Pas de Calais.[82] Forward deployment of the panzers there would have put them in the wrong place either for immediate counter-attack or to be a central reserve. Even after D-Day, many in the German senior leadership remained convinced that the Normandy landings were just a feint and that the real invasion was still coming in the Pas de Calais.

The other key issue in this debate, of course, is the actual effectiveness of Allied air power, which as we saw above is currently being re-examined. British historian David Fraser, for one, comes

Captain Paul Johnston

to the reasonable middle ground: "Rommel had been right in supposing that movement of German armour would be delayed and impeded by Allied air power, but wrong in assuming it could not take place at all."[83]

MEMOIRS AND UNIT HISTORIES

It should not be forgotten, of course, that ultimately the campaign was fought and won not by arrows on maps or abstract operational and strategic concepts but by real live flesh and blood men. Memoirs, biographies, and the personal accounts of battles often found in unit histories give some excellent accounts of what it was like to be there.

Unfortunately, we are left with few biographies and even fewer memoirs of the senior Canadian commanders from the campaign. In part, this is perhaps a reflection of what J.L. Granatstein called their "pallid, colourless" nature. First Canadian Army commander H.D.G. Crerar left no memoirs and is still without a biographer.[84] II Canadian Corps Commander Guy Simmonds has attracted more interest and is generally more highly regarded. Dominick Graham has written his biography.[85] George Kitching, 4th Canadian Armoured Division commander during the campaign, is one of the few to have left their memoirs.[86] An important study of Canada's general officer corps during the war overall is Granatstein's *The Generals*.[87]

Noteworthy recent memoirs that give a sense of the war from the perspective of the Canadians actually fighting it include George Blackburn's *The Guns of Normandy*[88] and especially C.C. Martin's *Battle Diary*.[89] Martin was a Company Sergeant Major with the Queen's Own Rifles of Canada. Also of note are Donald Pearce's haunting *Journal of a War*[90] and Fred Cederberg's *The Long Road Home*.[91] David Clark has written a novel about the fighting in Normandy, in particular, the ill-fated attack on Verrières Ridge.[92]

The issues outlined above are no mere arcane disputes amongst ivory tower academics. They remain emotional subjects. Any doubt about this was surely removed in the controversy over the Normandy episode of the CBC mini-series, *The Valour and the Horror*. That television episode provoked a firestorm of protest, an investigation by the CBC Ombudsman, and eventually an official Senate inquiry. Purporting to tell "the true story for the first time," the McKenna brothers, who produced the show, highlighted what they considered Canadian military incompetence in Normandy. While *The Valour and the Horror* was rather muddled and poor history, the great irony is that (as outlined above) consideration of the Allied and specifically Canadian military performance in Normandy is the dominant controversy amongst

military historians. That the Normandy campaign included difficulties may well have come as a revelation to the McKenna brothers, but that hardly means that their account told of this "for the first time." Really, this underscores the importance of understanding the historical debates when reading about the great clashes of that desperate Norman summer.[93] Consensus on these issues has not yet been reached; consequently, almost any work one reads about the Normandy campaign comes from a distinct school of thought. There are not yet any "neutral" or "objective" histories of the campaign. Failure to understand that can lead not only to embarrassing stumbles like the McKenna's The *Valour and the Horror* episode but also to deeper misunderstandings. Those who seek to be students of military history—in particular, serving military professionals—would do well to keep the larger framework of the debate in mind before they crack open any one particular book.

About the Author . . .

Captain Paul Johnston completed an honours BA in Military and Strategic Studies at Royal Roads Military College and an MA in War Studies at The Royal Military College of Canada. His MA thesis was a study of tactical air power in the battle of Normandy. He is an intelligence branch officer whose service has included tours with a CF-18 Tactical Fighter Squadron in Germany and the Joint Force Headquarters in Kingston. While posted in Europe, Captain Johnston took the opportunity to make three tours of the Normandy battlefields. Captain Johnston is currently employed at National Defence Headquarters.

ENDNOTES

1 John Keegan, *The Battle for History: Re-Fighting World War Two* (Toronto: Vintage Books, 1995), p. 30.

2 Chester Wilmot, *The Struggle for Europe* (London: Collins, 1954).

3 See, for instance, John Keegan, *The Battle forHistory*.

4 Gordon A. Harrison *Cross-Channel Attack* (Washington: Dept of the Army, 1961).

5 Martin Blumenson, *Breakout and Pursuit, United States Army in World War II, The European Theatre of Operations* (Washington: Dept of the Army, 1961).

6 Lionel F. Ellis, *Victory in the West* Vol I *The Battle of Normandy*, (London: HMSO, 1962).

7 C.P. Stacey, *Official History of the Canadian Army in the Second World War,* Volume III, *The Victory Campaign: The Operations in North-West Europe, 1944-1945* (Ottawa: Queen's Printer, 1966).

8 Ralph Bennett, *ULTRA in the West: The Normandy Campaign 1944-45*, (New York: Charles Scribner's Sons, 1979).

9 P.W. Winterbotham, *The Ultra Secret* (London: 1974).

10 Bennett, *Ultra in the West*, p 119: "There appears to be no Ultra warrant for a number of his [Winterbotham's] statements."

11 John Keegan, *Six Armies in Normandy* (London, The Trinity Press, 1982).

12 Max Hastings, *OVERLORD: D-Day and the Battle for Normandy, 1944* (London: Pan, 1984).

13 Cornelius Ryan, *The Longest Day* (New York: publisher and date of publication unknown).

14 Stephen Ambrose, *D-Day June 6, 1944: The Climactic Battle of World War II* (New York: Simon & Schuster, 1994).

15 John English, *The Canadian Army in the Normandy Campaign: A Failure in High Command* (New York: Praeger, 1991).

16 J.L. Granatstein and Desmond Morton, *Bloody Victory: Canadians and the D-Day Campaign, 1944* (Toronto: Lester and Orpen Dennys, 1984).

17 Terry Copp and Robert Vogel, *Maple Leaf Route: Caen* and *Maple Leaf Route: Falaise* (Alma, Ont: Maple Leaf Route, 1983).

18 Carlo d'Este, *Decision in Normandy* (London: William Collins Sons & Co. Ltd., 1983).

19 *OVERLORD: D-Day and the Battle for Normandy* (London: Michael Joseph, 1984), p 12.

20 John Ellis, *Brute Force*, (London: Andre Deutsch Limited, 1990).

21 Trevor N. Dupuy, *A Genius for War: The German Army and the General Staff, 1807-1945* (New York: Prentice Hall, 1977), p. 4.

22 Martin van Creveld, *Fighting Power: German and US Army Performance 1939-1945* (Westport: Greenwood Press, 1982).

23 Allan Millet and Williamson Murray, editors, *Military Effectiveness*. Volume Three, *The Second World War* (Boston: Allen and Unwin, 1988).

24 C.P. Stacey, *The Victory Campaign*, p. 274.

25 Ibid, p. 275.

26 Dupuy, *A Genius for War*, pp. 234-6.

27 Stephen E. Ambrose, *Citizen Soldiers: The US Army from the Normandy Beaches to the Bulge to the Surrender of Germany, June 7, 1944 - May 7, 1945* (New York: Simon & Schuster, 1997).

28 John Balkoski, *Beyond the Beachhead: The 29th Infantry Division in Normandy* (Stackpole Books, 1999).

29 For a succinct statement of this school of thought, see Terry Copp "From the Editor" in *Canadian Military History* 7, 4 (Autumn 1998).

30 *Saving Private Ryan* even gets a kick in on this, with one of the movie's characters opining "That guy's over-rated."

31 "Normandy to the Baltic," *Journal of the RUSI*, November 1945.

32 B.L. Montgomery, *The Memoirs of Field Marshal The Viscount Montgomery of Alamein, K.G.* (Cleveland, Ohio: World Publishing, 1958).

33 David Belcham, *Victory in Normandy* (London: Chatto & Windus, 1982).

34 Nigel Hamilton, *Monty: Master of the Battlefield* (London: Hamish Hamilton, 1986).

35 English, *Failure in High Command*, p. 305.

36 C.P. Stacey, *The Victory Campagain,* p. 276.

37 Ken Tout, *A Fine Night for Tanks: The Road to Falaise* (Sutton Publishing, 1998).

38 See his article "Canadian Armour in Normandy: Operation 'Totalize' and the Quest for Operational Manoeuvre" *Canadian Military History* 7, 2 (Spring 1998).

39 Chester Wilmot, *The Struggle for Europe* (London: Collins, 1954), p. 289.

40 This message is quoted in Chester Wilmot, *The Struggle for Europe,* p. 313, and widely repeated elsewhere, for instance, in John Terraine's important history of the RAF in World War II, *The Right of the Line* (London: Hodder and Stoughton, 1985), p. 637.

41 Max Hastings, *OVERLORD: D-Day and the Battle for Normandy* (London: Michael Joseph, 1984), p. 266.

42 For instance. a chapter of Gooderson's *Air Power at the Battlefront: Allied Close Air Support in Europe 1943-45* is titled "Allied Fighter-Bombers Versus German Armoured Forces: Myths and Realities" (pp. 103-124). See also, "Anglo-Canadian Tactical Air Power in Normandy: A Reassessment," 1987 presentation at the American Military Institute, Virginia by Terry Copp and Robert Vogel.

43 Richard Hallion, *Strike From the Sky: The History of Battlefield Air Attack 1911-1945* (Washington: Smithsonian Institution Press, 1989).

44 David Spires, *Air Power for Patton's Army: The XIX Tactical Air Command in the Second World War* (forthcoming).

45 W.A. Jacobs, "Air Support for the British Army, 1939-1943," *Military Affairs* XLVI, 4 (December 1982), pp. 197-182; "Tactical Air Doctrine and AAF Close Air Support in the European Theater, 1944-1945" *Aerospace Historian* 27, 1 (March 1980); "The Battle for France," Chapter 6 in *Case Studies in the Development of Close Air Support,* edited by B.F. Cooling (Washington: Office of Air Force History, 1990).

46 Benjamin Franklin Cooling editor, *Case Studies in the Development of Close Air Support* (Washington, D.C.: Office of Air Force History, 1990).

47 Ian Gooderson, *Air Power at the Battlefront: Allied Close Air Support in Europe 1943-45* (London: Frank Cass, 1998).

48 Sir Arthur Harris, *Bomber Offensive* (London: Collins, 1947).

49 Haywood S. Hansell Jr., *The Air Plan That Defeated Hitler* (Atlanta, Georgia: Higgins-McArthur, 1972).

50 John Terraine, *The Right of the Line: The Royal Air Force in the European War, 1939-1945* (London: Hodder & Stoughton, 1985).

51 See Solly Zuckerman, *From Apes to Warlords* (New York: Harper & Row, 1978).

52 Walt W. Rostow, *Pre-Invasion Bombing Strategy: General Eisenhower's Decision of March 25, 1944* (Austin: University of Texas Press, 1981).

53 Gooderson devotes a chapter of his *Air Power at the Battlefront* to reaching this conclusion.

54 Ian J. Campbell, *Murder at the Abbaye* (Ottawa, Golden Dog Press, 1996).

55 Howard Margolian, *Conduct Unbecoming: The Story of the Murder of Canadian Prisoners of War in Normandy* (Toronto: University of Toronto Press, 1998).

56 Tony Foster, *Meeting of Generals* (Toronto: Methuen, 1986).

57 See, for instance, Bill McAndrew "The Canadians of Verrières Ridge," in *The Valour and the Horror Revisited,* edited by D. Bercuson & S.F. Wise (Montreal & Kingston: McGill-Queens University Press, 1994), p. 145.

58 See Max Hastings, *Das Reich: The March of the 2nd SS Panzer Division through France* (New York: Rinehart and Winston, 1982).

59 Corelli Barnett, *Britain and Her Army* (London: publisher and date of publication unknown).

60 D'Este, *Decision in Normandy,* p. 270.

61 David Irving, *The War Between the Generals* (London: St Martins Press, 1981).

62 He also argues, for instance, that Hitler neither ordered nor knew of the holocaust.

63 Russell F. Weigley, *Eisenhower's Lieutenants: The Campaigns of France and Germany, 1944-1945*.

64 Quoted in D'Este, *Decision in Normandy*, p. 166.

65 See Tedder's memoirs *With Prejudice: The War Memoirs of Marshal of the Royal Air Force Lord Tedder* (Boston: Little, Brown, 1966). Hamilton, Montgomery's biographer, wrote of this incident that it was "one of the most reprehensible performances by a senior Allied commander in modern battle history."

66 D'Este, *Decision in Normandy*, Chapter 13, "The Air Chiefs."

67 Paul Karl Carrell, *Invasion — They're Coming! The German Account of the Allied Landings and the 80 Days Battle for France* (London: Harrap, 1962).

68 Hans Speidel, *We Defended Normandy* (London: publisher unknown, 1951).

69 Friedrich Ruge, *Rommel in Normandy* (San Rafael: Presidio Press, 1979).

70 Gunther Blumentritt, *Von Rundstedt: The Soldier and the Man* (London: Oldhams, 1952).

71 Basil Liddell Hart editor, *The Rommel Papers* (New York: Harcourt, Brace, 1953).

72 Basil Liddell Hart, *The Other Side of the Hill* (London: publisher and date of publication unknown).

73 Hans von Luck, *Panzer Commander: The Memoirs of Colonel Hans von Luck* (New York: Dell, 1989).

74 James Lucas and James Barker, *The Battle of Normandy: The Falaise Gap* (New York: Holmes & Meier, 1978).

75 Matthew Cooper, *The German Army 1939-1945: Its Political and Military Failure* (London: Macdonald and Janes, 1978).

76 Samuel W, Mitcham, Jr., *The Desert Fox in Normandy: Rommel's Defense of Fortress Europe* (Westport: Praeger, 1997).

77 Michael Reynolds, *Steel Inferno: 1st SS Panzer Corps in Normandy* (New York: Sarpedon, 1997).

78 Craig Luther, *Blood and Honor: The History of the 12 SS Panzer Division "Hitler Youth," 1943-1945* (San Jose: R. James Bender, 1987).

79 This is why he so famously proclaimed that the day of the invasion itself would be the "longest day," for it would determine who won or lost the war.

80 This claim was advanced (after the war) by, amongst others, Friedrich Ruge in *Rommel in Normandy*, and has been widely repeated elsewhere.

81 Matthew Cooper, in *The German Army 1933-1945,* opines that because neither von Rundstedt nor Rommel got what they wanted, it is "now impossible to tell" (p. 499) which view was right.

82 For this story see Jock Haswell, *The Intelligence and Deception of the D-Day Landings* (London: B.T. Batsford, 1979).

83 David Fraser, *And We Shall Shock Them: The British Army in the Second World War,* (London: Hodder & Stoughton, 1983), p. 328. The prominent American air power historian Richard Hallion has noted that consideration of tactical air power has been polarized between those arguing that it had little effect upon the land campaign and those arguing that it was decisive—whereas in fact the truth lies somewhere in the middle. *Strike From the Sky*, p. 2.

84 Paul Dickson completed a doctoral thesis on Crerar at the University of Guelph in 1993.

85 Dominick Graham, *The Price of Command: A Biography of General Guy Simmonds* (Toronto: Stoddart, 1993).

86 George Kitching, *Mud and Green Fields: The Memoirs of Major-General George Kitching* (St Catharines, Ont: Vanwell Publishing, 1993).

87 J.L. Granatstein, *The Generals: The Canadian Army's Senior Commanders in the Second World War* (Toronto: Stoddart, 1993).

88 George Blackburn, *The Guns of Normandy: A Soldier's Eye View, France 1944* (Toronto: McCelland & Stewart, 1995).

89 C.C. Martin (with Roy Whitsed), *Battle Diary: From D-Day and Normandy to the Zuider Zee and VE* (Toronto: Dundurn Press, 1994).

90 Donald Pearce, *Journal of a War: North-West Europe, 1944-1945* (Toronto: Macmillan, 1965).

91 Fred Cederberg, *The Long Road Home* (Toronto: General Publishing, 1984).

92 David Clark, *The Ridge* (Burnstown, Ont: General Store Publishing, 1994).

93 For an excellent overview of the *Valour and the Horror* controversy see David Bercuson and S.F. Wise *The Valour and the Horror Revisited* (Montreal: McGill-Queen's University Press, 1994).

LEOPARDS IN KOSOVO

THE SOLUTION FOR AN ARMOURED COMBAT VEHICLE?

Captain Don Senft

Nineteen Ninety-Nine was an important year for the future of the Royal Canadian Armoured Corps (RCAC). A number of key meetings and planning sessions to map out the future of the Army were held that had obvious implications for the RCAC. The crux of many of these sessions was the replacement for the main battle tank (MBT), the much-touted armoured combat vehicle (ACV).

Defining the type of vehicle and what its role should be proved difficult. There are clearly two sides to this debate, both of which address the capability of the ACV as a multi-purpose combat vehicle and in peace support operations. Both arguments are well documented and have been the subject of many studies, debates, and even simulations. Proponents of the wheeled, 105mm gunned ACV have based their arguments by showcasing the wheeled ACV's capability in peace support operations, which have clearly become the focus of armed forces worldwide. Their position is that a wheeled ACV is ideal for such operations. Given its firepower and flexibility, and despite its reduced protection (relative to a tank), it also capable of dealing with conventional threats on the battlefield. Proponents of the wheeled ACV have argued that the tank is a dinosaur designed for large scale, mechanized battlefields and that it has no place in peace support operations due to its size and weight. Apparently, the tank lacks the flexibility to operate effectively in both time of war and in peace support operations. However, there has never been a true test of the theories and studies and no real validation of the simulations. That is until now.

I have recently had the privilege of serving as the armoured advisor for the 1 Princess Patricia's Canadian Light Infantry (PPCLI) Battlegroup (BG) in Kosovo during Operation Kinetic, overseeing the first employment of Leopard tanks in the peacemaking role. It is now possible to positively refute many of the arguments supporting a wheeled ACV based on first hand operational experience with the Leopard and observation of the effectiveness of the wheeled ACV—represented by the Italian Centauro—in that arena of operations. I will highlight those attributes of the Leopard that so well suited it to its new role, while at the same time drawing on personal observation of the Italians and their employment of the Centauro. My aim will be to show clearly that our proven warfighter—the venerable Leopard—is a superb peacekeeper and is, in fact, the Corp's ACV of the future.

In highlighting the capabilities of the Leopard in this new spectrum of low intensity conflict, I will focus on the characteristics of armour in order to highlight how mobility, protection, flexibility, and firepower resulted in its unrivaled success in support of Operation Kinetic. By demonstrating where the Leopard excelled in each of these characteristics, it will become readily apparent that the Leopard tank is completely capable of meeting and exceeding all task standards set for operations in support of peacekeeping.

BACKGROUND

There was a very large multinational tank force within Kosovo Force (KFOR). It was deployed to Kosovo to counter

the armoured threat posed by the Serbian (VJ) Army, which is equipped with the M-84 and T-55 tank. The NATO tanks included the German Leopard 2A5, the British Challenger 1, the Danish Leopard 1A4, the Canadian Leopard 1C1, the Italian Leopard 1A5, the US M1A1, and the French Leclerc. As most of the VJ armour successfully evaded NATO airstrikes and escaped to Serbia, there was a very large and potent armour threat situated along the Serbian/Kosovo border, which was able to launch across known ground with very little warning. The NATO tank force was deployed to deter any re-introduction of the VJ army led by its strong armoured brigades. A number of the NATO contingents chose to centralize their armoured assets and hold them as a reserve to be deployed only when required. Canada, Denmark, and Italy chose to deploy their tanks differently, as part of their normal routine in support of the mission. In doing so, they were able to demonstrate the effectiveness of the tank in this role, all the while maintaining the necessary deterrence so vital to maintaining stability in the region. The Strathcona Leopards assigned to the 1 PPCLI BG were employed as a BG resource in the same fashion as the other battalion support platoons such as anti-armour or recce. Initially the Leopard troop was assigned an area of responsibility (AOR) based in the Serbian village of Kuzmin, located within the BG boundaries. At mid tour, due to a change to the BG boundaries, the Leopard troop was returned to the BG main camp, but continued to operate as it had its own AOR. The tank troop operated throughout the BG AOR, controlling its operations through its own command post (CP), which operated as an outstation of the BG main command net.

The assigned mission was to provide a force projection and force protection capability to the BG. Daily tasks included vehicle patrols, vehicle checkpoints, support to cordon and search operations, defence of the main camp, and planning and support to a myriad of contingency plans. Through the course of the tour, the tanks ran up nearly 3500km each and proved reliable. The tanks performed very well in theatre. Several key points were confirmed as a result of their success in this new role, which clearly proved the Leopard's suitability as a peacemaker.

MOBILITY

I begin here with the characteristic that set the Leopard apart from its counterparts in theatre. The Leopard tank was able to distinguish itself in several key areas. Given their add-on armour, many of the main battle tanks in theatre weighed in at over 80 tons. The Challenger was a good example of the heavy armour that was deployed. In its KFOR configuration, it weighed in at 82 tons and was nearly five feet wider than the Leopard. MBTs of this size may have been well suited to the open rolling plains of the Podujevo Basin; unfortunately, as the mission evolved, many of these large and heavy MBTs found it impossible to adapt to the constraints of the peace support mission and were simply parked and held as a contingency force. The Leopard C1, however, was ideally suited to both roles. With the add-on armour package and the proven, reliable Improved Fire Control System (IFCS) and 105 mm gun combination, the Leopard would have easily held its own in a tank on tank fight. When the mission changed to that of peace support, the Leopard easily adapted to this new role.

The Leopard C1 is a medium tank; even with the add-on armour, it weighed in at only 47 tons. This relatively low weight allowed the Leopard to access areas that British, French, and German tanks could not. For example, the majority of the bridges in Kosovo are classed for 50 tons or less. In addition, many of the mountain roads are crisscrossed at regular intervals with concrete culverts capable of taking the weight of a Leopard but not that of a heavier tank. This allowed the Canadian tanks access to areas that required a show of force to aid in pacification without damaging the routes and making them impassable to the local populace.

The Leopard C1 is also a relatively small tank. The Kosovo countryside is dotted by small villages, with most roads lined with brick and rock walls making them very narrow. The larger MBTs had to avoid these areas altogether or force their way through, resulting in serious damage to the local populace's homes. The Leopard C1 accessed these areas without difficulty, allowing it to have a much larger patrol area than the other tanks and allowing it to participate as the inner or outer cordon in many of the operations that were conducted in theatre. In proving many of these secondary routes as patrol routes, the Leopard's ability to pivot turn and withdraw out of tight situations allowed it to extract itself from areas without having to reverse long distances or make difficult multi point turns. In addition, with the Canadian AOR being nearly 1000 kilometres square, the ability of the Leopard to use main routes without interrupting traffic flow allowed it to respond quickly anywhere within the AOR. The larger MBTs proved a severe disruption to these key routes when they were on the move, affecting not only local traffic but seriously impeding the vital flow of KFOR supply convoys that also relied on these routes.

The fact that the Leopard C1 is a tracked ACV also came into play. As the weather worsened with the onset of the rainy season, many of the roads became completely impassable and dangerous for wheeled vehicles. Many of the key patrol routes leading to isolated mountain villages became the sole responsibility of the tanks or other tracked vehicles belonging to the BG. We did not encounter any conditions that the Leopard C1 was not able to overcome.

In reviewing the Italian experience with the Centauro during this same period of operations, several key points arise. The Italian commander highlighted the fact that once the weather made the roads slick, the sheer weight of his vehicles and the limited traction afforded by their eight wheels rendered them ineffective and reduced his area of influence by nearly 60%. The vehicle's large turning radius proved detrimental, making it very difficult to extract the vehicle from the narrow streets and mountain roads so prevalent in the Italian AOR around the city of Pec. The vehicle operated well during the summer months, but as winter set in, the Italians handed over many of their Centauro's routes and areas of responsibility to their Leopard 1A5s. One other point that warrants mention is the argument that the strategic deployment of a wheeled ACV is better than the Leopard. The Centauro, as deployed in theatre with its level 3 add-on armour, had a combat weight of just over 32 tons. A large aircraft such as the C-5 or C-17—the same as that required for the Leopard—was thus required to deploy the vehicle. In this case at least, the Centauro held no strategic lift advantage over the Leopard C1. Clearly when examining the mobility requirements presented in Kosovo, the Leopard C1 reigns supreme.

PROTECTION

Of the vehicles deployed as part of the 1 PPCLI BG, none other provided the level of protection that was afforded by the Leopard against an array of threats. With the add-on armour package, the Leopard was set to cover the full spectrum of available anti-tank weapons. The rocket-propelled grenade (RPG) series of weapons as well as several models and adaptations of the old "bazooka" are commonly used by the former warring factions in Kosovo. The VJ army is equipped with the M84 tank sporting a 125mm canon and the T55 with its 100mm main gun. The infantry fighting vehicle of choice for the VJ forces is the M80 or M80A with its 20mm auto canon. The Leopard was the only vehicle in the BG capable of meeting any of these threats and having any chance of surviving a direct hit. The add-on armour gave a solid increase in crew protection, with very little additional weight. This resulted in the Leopard being called upon frequently for operations where the possibility of anti-tank weapons may have been present. The add-on armour served to increase crew confidence in the ability of their vehicle to take a hit and survive,

allowing them to fight the vehicle more aggressively.[1]

The Leopard also gave the BG a unique capability of using the mine plows and rollers to clear and prove large areas of ground in a very short time. No other BG asset provided this capability. If the requirement to activate any of the contingency plans countering VJ incursion had to be implemented, this capability would have enabled the BG to move into its defensive positions in the heavily mined areas north of Pristina. A wheeled ACV could not and cannot provide this same type of support.

In so far as protection is concerned, the same modular approach to protection that was employed by the Leopard is applicable to a wheeled ACV such as the Centauro. As described, it normal combat weight of 25 tons, was increased to 32 tons with the level 3 package, giving it the protection required against the VJ army threat. This added protection (and weight) severely hampered its off road movement capability and had a detrimental impact on the vehicle's mobility. The uparmoured Leopard was both highly mobile and very well protected.

FIREPOWER

There is no doubt whatsoever that the tanks were the "hammer" for KFOR. The 105mm and 120mm cannons of the armour were the greatest firepower available to respond to a high intensity threat such as a VJ incursion. There was an abysmal lack of indirect fire support available, with only 6 self-propelled guns available in the British brigade area. For this reason, the 105mm gun of the Leopard could have been employed in the semi-indirect or indirect role. The fact that the Leopard C1 is one of the few tanks remaining in the world still equipped with gun laying instruments (gun clinometer and traverse indicator) allowed us the

flexibility to perform this role as a worst case scenario. The crews were drilled in the techniques to ensure they were ready to perform the task. Given that both white phosphorus smoke (WP) and high explosive squash head (HESH) ammunition are still carried on them, the tanks were well suited to support the infantry in the indirect and semi-indirect fire support role.

Most of the other tanks in theatre were only equipped with High Explosive Anti Tank (HEAT) or Sabot ammunition designed for killing enemy vehicles. This limited their flexibility in being employed in a non-typical role. NATO had limited its indirect fire support assets in favour of relying heavily on its airpower to blunt the force of any large scale Serbian assault. The coaxial and anti-aircraft machine guns of the Leopard allowed a scaled response to threats by providing a suitable option for the commander to return accurate and effective fire against a lesser threat. With the coax linked into the IFCS of the Leopard, the commander could be certain that the intended target was neutralized, thus reducing collateral damage and casualties. The availability of these

two accurate weapons systems on the Leopard made it well suited to this operation, allowing day to day operations to continue with the machine guns as the primary system and the 105mm gun at the ready should the overall tactical situation in the theatre worsen.

Finally, the tank's sighting system was perhaps our Achilles heel, as the lack of thermal imager left us at a decided disadvantage. The current night fire control system offered us only limited target acquisition and surveillance capabilities at night, somewhat limiting the vehicle's effectiveness to operate on a 24 hour per day basis. The addition of the thermal sight on the 1A5 turrets will rectify this situation, correcting the one shortfall that was our biggest limitation on this tour. The Centauro has a robust thermal-equipped turret, very similar to that of the Leopard 1A5. In this instance, there was no advantage to the Leopard over the Centauro. Both have very capable weapons systems offering a robust and accurate response to any threat, and once the 1A5 is fielded, this response will be available by day or

night in a variety of weather conditions.

FLEXIBILITY

Because of the factors outlined above, the Leopard proved itself as a jack of all trades. The Leopards in theatre were able to conduct all of the same tasks assigned to the infantry platoons operating with the BG, but from a much more mobile and well-protected platform. In addition, the tanks proved adept at conducting vehicle check points (VCPs), as it was very quick and simple to have two tanks roll into position on major routes, pivot turn one around, and begin checking vehicles. The tanks made a firm statement and were an intimidating sight commanding respect. The eight personnel from the two tanks were the minimum number of personnel that could be used to effectively conduct the VCP; any less would not only have been impractical but dangerous. For this reason, the current four man crews assigned to the Leopard are the ideal solution. The smaller crew of the Leclerc and its autoloader forced the French to use a B vehicle to shuttle additional personnel to the site of the checkpoint when conducting VCPs with their tanks. Any reduction to the current Canadian four man crew would have a significant impact on this flexibility.

The tanks were also regularly involved in providing cordons for many of the searches that were conducted in theatre. Once again, their dominating presence was put to good use in establishing a solid presence as part of the outer cordons, cutting off all traffic flow into the area of the operation as well as providing a quick and powerful response capability should the situation escalate.

Finally, the tanks were fully integrated into the contingency plans that involved defence of Kosovo against large scale VJ Army invasion. The tanks' mobility and firepower were tied in closely with the limited anti-tank assets of the BG to inflict as much damage as possible to any adversary. Most of this fighting would have occurred in the open areas in the northern half of the province on ground that had not been cleared of mines. As our recces showed, this ground was almost impassable to wheeled vehicles once the rains began to fall. There was no other BG asset capable of traversing this difficult ground quickly, and no other asset that could use its firepower, mobility, and protection to deny this high speed approach to the enemy. Even the recce squadron

Coyotes had difficulty using these routes once the weather made them impassable. There was no wheeled vehicle in the BG that could safely navigate around this terrain in the rainy season.

By employing the Leopard as a matter of routine, it became a familiar sight conducting a myriad of different tasks across the BG AOR and was thus not viewed as any sort of escalation. The local population not only supported the tanks' employment in the AOR but were also extremely receptive and happy to see this symbol of KFOR's strength rumble past their shattered homes on a regular basis. The Leopard excelled in all of the tasks it was assigned in support of this peacemaking operation and stood ready at a moment's notice to revert to its role as the king of the battlefield.

Cost

With the fiscal reality that we all face today, no examination of any purported success can be completed without first examining the bottom line. As stated previously, the Leopard proved to be one of the most reliable vehicles in the BG fleet. The Leopards operated at a 100% vehicle operational readiness state throughout the tour, despite their constant use and the high mileage accumulated in such a short period of time. The Leopard excels under constant use. Even though all the numbers are not in, a cursory attempt at determining the cost associated with the Leopard's operation (including parts, fuel, and spares) has the cost sitting at approximately $57 per kilometre. This is by no means a scientific result and is based on the information I had available to me at the time in theatre. This cost compares more than favorably to the forecasted costs for vehicles such as the LAV III, which has been estimated

at between $70 and $80 per kilometre. One would surmise that a wheeled, 105 mm-gunned ACV based on that same type of chassis would cost even more. The $57 per kilometre noted in theatre is substantially lower than the published figure of $82 per kilometre for the Leopard. This may be due to the fact that the tanks did not sit idle for any period of time. The add-on armour had no ill effect on the tank, and only two major assemblies required repair. The remaining repairs were solely routine replacement of track pads, track, shocks, and components of the hydraulic system.

The other aspect of the cost factor is, of course, the cost of acquisition. It is my belief that the Leopard 1A5s that are currently available on the market are selling for around $1 million each. The Italians reported that their uparmoured Centauros are selling for nearly three times that amount. The arithmetic appears fairly straightforward in that three Leopard 1A5s can be obtained for the cost of a single variant of a wheeled ACV, with the Leopard operating for less money on a day to

day basis. Not only would this course of action—purchasing Leopards— provide three times as many vehicles but it would also provide us with a tank that can perform almost all of the assigned warfighting and peace support tasks as well, or better, than any of the wheeled options. This was proven in Kosovo.

As for future costs, it will still be much cheaper to upgrade the Leopard 1A5 with what little equipment is lacking through purchase on the open market with no research and development or manufacturing costs involved. Find it, buy it, and install it. The Leopard is not only the most cost effective option; it would provide Canada with a larger, more capable fleet that can operate at cost savings over many of the vehicles currently in operation.

Conclusion

By deploying the Leopard into a theatre of operations such as Kosovo, it has been possible to validate much of what has been debated over the past decade. Kosovo was a chance

to see if a medium tank such as the Leopard could shed its warfighting skin and face the challenges presented in peace support operations. The wide variety of tanks in theatre allowed us to see the full spectrum of armoured employment in support of such operations. As the BG Armoured Advisor, I was fortunate in having a free reign to employ the Leopards as fully as possible, ensuring they were an integral part of the BG's operating methodology. The Leopard proved beyond any doubt that it was fully capable of completing all of the tasks normally assigned in peace support operations while still maintaining its capability to respond with lightning speed, overwhelming firepower, and robust protection against any threat. In doing so, it demonstrated how suited it was to the conditions and limitations of this mission.

It was also possible to witness the Italians' employment of the Centauro in this same theatre of operations. The Centauro's inability to operate under certain conditions and the fact that the Italians used their Leopard 1A5s to fill the void created speaks volumes as to its mobility. Despite add-on armour, the Centauro was not as well protected as the Leopard. Had

any large scale VJ incursion occurred, the Italians would have been forced to send their tanks first, holding the Centauro's in reserve. The Centauro is not as well protected as the tanks. At nearly 33 tons, an up-armoured Centauro is no more air transportable than our Leopard. It is fully understood that the Centauro is but one example of many contenders for the ACV project. During the course of its first five months as a peacemaker, the Leopard's performance refuted many of the arguments made against it, showing clearly that it can serve exceedingly well in this role.

Is the Leopard 1A5 or C2 the answer then? Not quite. It will certainly go a long way to ensuring that the Army has a tank to serve us well into the next century. It will enable us to operate the vehicle 24 hours a day; it will give us a much needed night surveillance capability. What is still required is either a larger, more powerful gun such as the 120mm or a high pressure 105mm with improved ammunition. Secondly, total replacement of the hydraulic turret drive system with a more reliable, safer, faster, and less maintenance-intensive electric drive

system would be beneficial. Finally, the crew commander must have an independent thermal sight that allows him to seek and acquire targets while the gunner continues an engagement. This hunter-killer sight is readily available on the open market and should be included in the next upgrade project for the 1A5 turrets. These modifications to the 1A5 will provide us a suitable platform to continue operating effectively for at least 15 more years, a vehicle that is not only a robust and proven warfighter but now an equally effective and proven peacemaker.

The Leopard has proven itself in the training areas of Canada and has now proven itself in a theatre of operations in Kosovo. For the foreseeable future, and until armoured fighting vehicle technology proves otherwise, the Leopard is the Army's ACV of choice.

About the Author . . .

Captain Don Senft has served as a troop leader and Battle Captain with Lord Strathcona's Horse (Royal Canadians) and as a staff officer with Headquarters, 1 Canadian Mechanized Brigade Group. He was recently the Senior Liaison Officer and Armour Advisor to the 1 PPCLI Battle Group in Kosovo. He is currently second-in-command of "C" Squadron Lord Strathcona's Horse (Royal Canadians) in Edmonton, Alberta and working towards a BMASc through the Royal Military College of Canada.

ENDNOTES

1 It must be pointed out that, even with the addition of the add-on armour, the Leopard did not show any adverse signs of wear and tear due to the extra weight. There was, in fact, a marked reduction in the number of major assemblies that were replaced, due in no small part to the fact that the vehicle was used on a regular basis and did not sit idle for any prolonged period. The Leopard was one of the most reliable vehicles in the BG.

Captain Don Senft

OBSERVATIONS AND LESSONS FROM RECONNAISSANCE SQUADRON
LORD STRATHCONA'S HORSE (ROYAL CANADIANS) IN KOSOVO

Lieutenant Christopher Hunt

The Reconnaissance Squadron Lord Strathcona's Horse (Royal Canadians) (LdSH(RC)) deployed to Kosovo as part of OPERATION KINETIC Rotation 0, June to December 1999. Overall, it was an excellent tour, with the Squadron experiencing a wide range of tasks and learning several lessons. This article deals with the employment of the Squadron, observations on command and control, lessons learned, and recommendations on the future employment of medium reconnaissance squadrons.

The Squadron was placed under Operational Control (OPCON) to the Multi-National Brigade (Centre) (MNB(C)). During its time in Kosovo, the Squadron had the opportunity to work with two different Brigade Headquarters: 4th (UK) Armoured Brigade from June to August 1999, and 19th (UK) Mechanized

This very minute bids thee open thine ear...[1]

Brigade/MNB(C) from September to December 1999. Being a brigade asset, the Squadron worked throughout the MNB(C) Area of Responsibility (AOR) and also conducted many tasks into MNB(N), MNB(S), MNB(E), and MNB(W) which were the French, German, American, and Italian sectors respectively, although all tasks were conducted under the auspices of MNB(C). The Squadron was employed in a very wide range of tasks covering most roles and tasks outlined in *The Reconnaissance Squadron in Battle* (circa 1978). One major exception was the Nuclear, Biological and Chemical (NBC) surveys.

TASKS

The Squadron was primarily employed in security tasks, including Observation Posts (OPs), patrols, checkpoints, vital point security, and escorts. OP tasks, both covert and overt, were conducted on a wide range of Named Areas of Interest and Target Areas of Interest (NAI and TAI), ranging from enforcement of the Ground Safety Zone (GSZ) with Serbia, to areas of high ethnic tension deep inside Kosovo. The all-weather long-range surveillance capability of the Coyote was constantly in high demand throughout the brigade AOR. Patrol tasks were common throughout this tour. Assault Troop, augmented by elements from the reconnaissance troops, spent approximately two weeks in June and July patrolling in downtown Pristina, assisting 1st Battalion, The Parachute Regiment, with maintaining law and order in the city. Additionally, the Squadron deployed elements, especially the Assault Troop, to smaller towns and even rural areas where brigade considered the Battle Groups required assistance to increase the Kosovo Force (KFOR) presence.

Vehicle and Personnel Checkpoints (VCPs) were first conducted while the Squadron was in Pristina, and became a common task throughout the rest of the tour. One of the final tasks of the Squadron on this rotation was to control the GSZ crossing checkpoints at Gates 2 and 3 North of Podujevo. Vital point security was a common task, particularly on the three occasions when the Squadron was assigned a temporary Area of Operation (AO). The most common static guards were of Serb churches and schools, the obvious targets of ethnic violence. Finally, the Squadron conducted countless escort tasks of VIPs and convoys throughout the brigade AOR,

Lieutenant Christopher Hunt

into other MNBs, and across the administrative boundary into Serbia.

The Squadron conducted a number of reconnaissance tasks, including zone, route, and point reconnaissance. Route BEAVER, which runs east from Pristina to the GSZ at Gate 4 was initially reconnoitered by a troop in June 1999. Furthermore, the Squadron conducted several point reconnaissance tasks of bridges, and gained a reputation within the brigade for being the only unit to routinely detail and forward engineer information within the normal course of its operations. The Squadron maintained a comprehensive high confidence route trace of the brigade AO. Point reconnaissance tasks were conducted on several locations of suspected illegal activity during the course of the tour.

As various units rotated in and out of the brigade AOR, the Squadron conducted economy of force tasks to plug the gaps during transitional periods. The Squadron was employed in the Lipjlan area during the hand-over from 1 Royal Gurkha Rifles Battle Group to the Finnish Battalion (FINBAT). During September, it was assigned its own AO when

elements of the Irish Guards Battle Group rotated out and before the Swedish Battalion (SWEBAT) replaced them the following month. The AO consisted of the villages of Caglavica, Laplje Selo, and Preoce, centred approximately 4 km south of Pristina. During October, the Squadron took over a large AO in the mountains to the east of Pristina from D Squadron, The Household Cavalry (The Blues and

Royals) and later handed over this area to SWEBAT. As part of this operation, the Squadron manned the GSZ crossing checkpoint at Gate 4 and conducted a rigorous routine of vehicle, foot, and air-mobile patrols and OPs to maintain a presence throughout its AO. Finally, in December the Squadron was given another AO which included the GSZ checkpoints at Gates 2 and 3 and the area in between them.

One of the standing tasks for the Squadron was to act as the brigade reserve which was maintained at two hours notice to move. Indeed, whenever problems flared up the Squadron soon found itself assisting the local battle group in resolving the situation. Examples of this include the provision of security in the village of Gracko following the murder of 14 Serb farmers in July and the call to assist in the search for a downed World Food Program aircraft in November. The Squadron offered the brigade a readily available, flexible force, that could perform a myriad of tasks from surveillance and patrolling in normal operations, to anti-armour ambushes in wartime.

OBSERVATIONS

In Kosovo, it was observed that despite NATO standardization, other multi-

national units did not understand command relationships. The Squadron was OPCON to MNB(C), which could assign missions and tasks to the Squadron; however, MNB(C) could not assign separate employment to *components* of the Squadron. On several occasions, the Squadron was placed under Tactical Control (TACON) to various battle groups for specific tasks and on one occasion it was assigned Tactical Command (TACOM) to 1 Royal Gurkha Rifles throughout August. Many battle group commanding officers equated TACON to TACOM, often trying to assign groupings as well as tasks or trying to place elements of the Squadron under command of their sub-units. The Squadron had to continually hold its ground on the question of the specifics of the command relationships. The Squadron became very proactive ensuring the proper application of the command relationships.

A British Brigade headquarters ran MNB (C) HQ and used different communications equipment from the Canadian Squadron. The Squadron commander's tactical rover and the Command Post (CP) had no secure brigade VHF capability. As a result, the Squadron had a Fit For Radio (FFR) Landrover with three British signalers attached to it. This vehicle was co-located with the Squadron CP. Additionally, most units in MNB(C) did not have secure communications below

brigade level. This meant that the Squadron often acted as a secure communications relay net when working with other units. The brigade all informed Combat Net Radio (CNR)

was usually only used for current operations. PTARMIGAN was the secure means used for all routine traffic.

LESSONS LEARNED

The Squadron has countless lessons to learn from the tour in Kosovo; there are a few, however, that stand out. These deal mainly with the Coyote, the surveillance system and squadron organization.

One of the major limitations of the Coyote is the lead/acid battery currently used in most of the fleet. It allows for only between 2-6 hours of surveillance capability before the vehicle has to be started and run for about two hours to re-charge the batteries. The gel batteries used in the Leopard have been tested and these have proven to be far superior,

This theory was proven to be correct when several Coyote OPs that were replaced by OP towers manned by soldiers achieved the same results.

The surveillance limitations of the Coyote were underlined during this tour. On several occasions, covert Coyote OPs were established to overwatch VCPs and to track suspicious vehicles. The covertness was achieved by remoteness from MSRs, often with stand-off distances of four to five kilometres. These operations proved to be unsuccessful as the Coyotes could not identify the "suspicious red Lada, vehicle registration number PR13482" from that distance, especially on the green Operator Control Station (OCS) screen. However, military vehicles (including trucks and Land Rovers) were easily differentiated from civilian vehicles. The surveillance asset of choice for many tasks became the Sony Handi-Cam, which could be easily employed by covert, dismounted OPs at closer ranges. When coupled with its tripod and digital zoom (360X), its picture quality was actually superior to the Coyote day camera. Its microphone allowed the operator to narrate what was being taped or to pick up sounds when required. In addition, the Handi-Cams were used at VCPs to record searches of

the scaling of replacement par
incorrect. Spare parts that had
identified as high use items based
previous year's usage, were put f
by the Squadron prior to deploy
However, this information was ne
to determine the spare parts that a
arrived in theatre. That decision wa
by a third line support unit w
consultation with the first line ope
The Squadron used spare parts
quickly than had been scaled, desp
equipment performing remarkabl
The second problem was th
sustainment flight schedule w
reactive and proved to be a
bottleneck in the supply system.
were emergency ordered as Imn
Operational Requirements (IORs
Montreal, however they subsec
sat in CFB Trenton for several day
a scheduled sustainment flight or a
aircraft could be loaded.

The Squadron Assault Troop
its utility, and in macro terms its do
validity, during this tour. It provio
Squadron the flexibility to handle a
brigade assigned. Assault Troop
proved to be surveillance and pati
often providing dismounted cove
and/or foot patrols to augment g
Coyote surveillance coverage. M

mainder of its tasks. Doctrinally and
actically, the five-car troop is too small
conduct a proper escort, zone, area,
ute, or point reconnaissance.
urthermore, it reduces the troop to a
ere four cars when crews go on rest
d recreation or other leave. This means
e troop leader becomes a patrol
mmander in addition to his or her
rmal duties. In the course of operations
this tour, this has led to individual
hicles being left alone for short periods

combination of Coyote and ligh
reconnaissance assets) needs to b
restored to enable reconnaissance troop
to execute their assigned tasks with th
necessary balance, depth and flexibilit
Assault Troop's primary doctrinal rol
needs to be adjusted to place a greate
emphasis on dismounted surveillanc
and security vice mobility/counter
mobility. Finally, the reconnaissanc
squadron needs to re-acquire some for
of light reconnaissance capability. Thes

A VIEW FROM THE PAST…

Compiled by Captain John Grodzinski, CD

In the British Army it was once very common for officers to write instructional guidebooks for use by their peers. These aided preparation for promotion examinations or served as guides for contemporary doctrine, training or general knowledge. The famous "Gale and Polden" series come to mind, which today form a rich body of literature for the study of nineteenth century doctrine and tactics. The Canadian Army has a similar, albeit less practised and unfortunately less known tradition.[1] The following is an excerpt from Observations on Cavalry Duties: Some Hints for Western Canadian Cavalry Men *by Major W.A. Griesbach,[2] 19th Alberta Dragoons, May 1914.*

SCOUTING[3]

Scouts are probably born, and not made. Only in actual warfare can it be definitely known whether an alleged scout is a real scout. The born scout is only half a scout unless he has a fairly comprehensive military training. Natural born scouts may be active, good horsemen, good shots, intelligent, of quick eyesight and good hearing. He may have dash and daring, plus coolness and presence of mind, and in primitive warfare would be a success, but in modern civilized warfare, such a man is of little or no use unless his military training and experience is extensive and comprehensive; that is to say, he should be familiar with the characteristics of all arms of the service, their strong and weak points, their limitations and necessities. He should have a clear conception of military organization, system and discipline.

…If you want definite information about a military situation, you must send a man who knows a military situation when he sees it. A scout gets his information about the enemy in spite of the enemy. A great deal of his information is arrived at by deductions...Before a scout goes out, he should receive:

- a clear statement as to his task,

- the probable movements and intentions of his own and neighboring forces,

- all information about the enemy obtainable,

All great nations learned their truth of word and strength of thought in war; they were nourished in war and wasted in peace, taught by war and deceived in peace, trained by war and betrayed by peace.

—Ruskin

- specific instructions as to the seizure of papers, documents, etc,

- instructions as to the nature and frequency of reports, where, and how, to be sent.

The scout should see without being seen. He works secretly. He only fights when he has to, or to get information…Courage and nerve will often pull the scout through. To carry out the specific instructions of the commanding officer is the first, and almost the only, duty of the scout. There should be no digression or falling by the wayside. Get the required information, and get it back to the commanding officer.

CONVOY ESCORT[4]

A wagon and two horses occupy ten yards in column on the road, and in mass ten feet each in width. These allowances include intervals and distances. Thus, one hundred two-horse wagons occupy one thousand yards on the road, and you can park one hundred wagons in a space of ground eighty-three yards by eighty yards. Prove this by drawing your convoy up in four sections, each section in line, and in each section twenty-five wagons. This movement is exactly similar to forming squadron column to the halt from column. The first twenty-five wagons occupy a line 250 [feet] long, or eighty-three yards and one foot. Allow a distance of ten yards between each line, which, plus

the allowance for wagon and team, ten yards equals twenty yards for each line of wagons, or eighty yards for the four lines. This is mentioned in length because one thousand yards of wagons is an imposing sight on the road, but they can be tucked away in a very small place when parked. To the convoy commander this is an important fact, since he can park his convoy behind a small feature. But a convoy should always be kept on the move whenever possible, and the enemy should be engaged as far away from the march of the convoy as is safe and advisable. The convoy commander should, on setting out, satisfy himself that the convoy is under control, and that there exists a system of parking similar to the above; and if there is no such system he should devise a system at once, and place someone in charge to carry it out, if necessary. Under the system prevailing in Canada in war these wagons will be driven by civilian teamsters, each receiving for his services remuneration equivalent to the pay of two lieutenant-colonels. Each teamster will have well considered and matured opinions on the question of the conduct of the convoy. The cowardice and insubordination of the hired transport driver is proverbial, and this must enter into your calculations, and you must provide a policy system whereby you can energetically and forcefully ensure the carrying out of your orders. First, then, organization for parking. Do this no matter how small

Success in war, like charity in religion, covers a multitude of sins.

—Napier

It is not necessary to sit on the convoy to protect it. In the disposition of your force you will be governed by all those factors which always govern military movements; that is to say, ground, weather, character of the enemy, and so forth. You may need some protection, both front and rear, but you should have your main body well in hand, as strong as possible, and on the move, occupying and holding successive positions covering the march of the convoy, from which positions you could repel such attacks as might be made. Bad roads will always be a factor in this work, and the bad spots on the road will be danger spots. Occupy the best fire position in the neighbourhood and hold it until the wagons are through. Do not allow straggling. Hindermost wagons must be kept closed up. Damaged wagons should pull out of the column at once so that there will be no check. If double teaming on heavy grades is necessary, the wagons should move into park from column at the foot of the hill, to one side of the road, and be brought into park again at the top of the hill. In the meantime the escort should hold a covering position for both parks.

ENDNOTES

1 Recent examples that come to mind are both by the well know pamphleteer Brigadier-General (Retd) Ernest Beno, *Training to be Sound Soldiers and Good Gunners*, published in 1997, and *Training to Fight and Win: Training in the Canadian Army*, published in 1999.

2 William Antrobus Griesbach was born at Qu'Appelle, Northwest Territories in 1878 and enlisted in the Canadian Mounted Rifles for service in South Africa. After the Boer War, he became a lawyer in Edmonton and in 1914 went overseas as a major and eventually commanded the 49th Battalion. He also commanded the 1st Brigade, 1st Canadian Infantry Division from February 1917 to February 1919. In 1921 he was promoted to brigadier-general and was also appointed to the Senate, where he became well known for his criticism of defence policy. From 1940 to 1943, he served as Inspector-General Western Canada. He died in 1945.

3 From Griesbach, pages 21 – 23.

4 From Griesbach, pages 36 – 37.

THE STAND-UP TABLE

COMMENTARY, OPINION AND REBUTTAL

Commentary on "Learning through Desktop Simulation: The Rationale for Acquiring a Canadian Version of TacOps" by DAT, Volume 2, No. 3., August 1999.

Major Don Banks of Headquarters Land Force Central Area offers the following commentary on the Directorate of Army Training update on TacOps as presented in the Army Doctrine and Training Bulletin, Volume 2, Number 3, August 1999:

I would like to comment on the article "Learning through Desktop Simulation: The Rationale for Acquiring a Canadian Version of TacOps" about the use of the TacOps game as the standard for Army tactical simulation. While I am somewhat familiar with an earlier variant of TacOps, I am not an expert on it by any means. I am, however, very familiar with a commercially available game called Steel Panthers II (an Strategic Simulations Inc (SSI) product). Those familiar with war games, should be familiar with Steel Panthers II. I read the TacOps article and then sat back and did a mental comparison between the two simulations. The question I came up with first and foremost, was: "why didn't we use Steel Panthers II?"

Steel Panthers II offers the following, among other features:

- All major recent and current armoured fighting vehicles, artillery, fixed and rotary wing aircraft, and infantry support weapons, from a wide range of nations including Canada, represented by realistic graphic images of the equipment;

- A selection of fixed scenarios, as well as the ability to edit scenarios and campaigns or build them from scratch, including terrain and visibility;

- The effects of elevation, rough terrain, water bodies, vegetation and buildings, using a very realistic 3D terrain image;

- The effects of leadership, morale, training, and ammo supply;

- Mines, obstacles, smoke, high explosives and scatterable munitions;

- Limited intelligence on enemy deployment;

- The ability to model up to battlegroup size forces on each side;

- The ability to play stand alone, head to head, LAN or e-mail;

- The ability to control forces as individual vehicles/squads or as sub-units;

- The ability to pre-plan movement of forces; and

- The ability to pre-plan indirect fire missions, including the effects of observer line of sight.

Steel Panthers II retails for approximately $40-50 and can be played on most personal computers typically available. There is also a variant which enables up to brigade level play, with many of the same capabilities as *Steel Panthers II* (No-I do not get a sales commission!!)

So, why don't we use Steel Panthers II "as well as, or even instead TacOps?"

Major R. Kennedy, Staff Officer Training at the Army Lessons Learned Centre, provides the answer:

The intent of purchasing and distributing TacOps to the Army was twofold. The first reason was to provide a tool that could be used to assist the conduct of tactical professional development training at units or on courses. It was assessed that the bulk of such training would be focussed on decision making and the application of Tactics, Techniques and Procedures (TTP) at the combat team to battle group level. The second reason was to provide all ranks with a product that they could use on their own or with others to practice or experiment with TTP and to have fun while doing so.

This is really our first attempt, at an Army level, to integrate a desk top computer game or simulation into our training. We would like this first attempt to meet with general success so that we can subsequently build upon it for future, similar endeavors. We were therefore looking for a tool that had a proven capability to assist in the conduct of professional development training. TacOps was already in use by the

Jamaican Junior Command and Staff Course and at the Canadian Forces School of Military Intelligence in Borden, where it has been demonstrated that it has the capability, when used effectively and with imagination, to be an asset to training.

I fully support Major Banks' comment with regards to *Steel Panthers II* (SP2). In comparison to TacOps, it is definitely more pleasing to both the eye and ear, offers a far wider variety of terrain and nationalities and, in my assessment, does a better job of taking into account aspects such as morale and training. Its handling of obstacles such as mines, dragon's teeth, and large bodies of water, etc is far superior to that of TacOps. The key difference between TacOps and SP2 that makes the former more effective in the support of training in planning and decision making at the combat team to battle group level, is the manner in which orders are issued and executed.

In TacOps, the participants simultaneously give orders to their units for the next minute of action, including routes of advance, action at halts, the types of targets to engage, what to do when fired upon or after having engaged a target, opening fire ranges, shifting of indirect fire, etc. Those orders, along with those of your opponent, are then executed simultaneously by the computer, with no ability of the participants to interfere. If you have not coordinated the manoeuvre of your units with the time it will take indirect fire to arrive or

supporting units to move into position, and your units are surprised on the move, you must live with the consequences.

In SP2, the issuing and execution of orders is 'turn' based. You move your vehicles individually or by platoon and direct them, vehicle by vehicle, as to what targets to engage. These orders are executed immediately. Your opponent's troops reply with fire based on directions provided by him or her during their previous turn. Those directions are limited to the range at which to open fire. In SP2 all movement is stopped as soon as a shot is fired. This permits you to react to that fire on an individual vehicle basis. It also permits you to move the remainder of the platoon around a piece of ground that is obviously under observation or fire, or to move vehicles into position to cover this newly located enemy. Once all manoeuvre and firing has stopped, indirect fire effects are resolved and your opponent's turn begins. In short, SP2 tends to lend itself to micro-management and does not necessarily force participants to co-ordinate activities involving time and space, make plans, and live with their consequences.

It can be argued that in limiting itself to the resolution of one minute's worth of action, TacOps is guilty of micro-management as well. There can indeed be a tendency for participants to try to give orders to every platoon or company every minute, if permitted to do so. This

is easily solved when TacOps is used in controlled circumstances. For example, you can limit participants to issuing orders to their units only every three to five minutes. This forces participants to plot with a greater degree of care the routes along which their units must manoeuvre and the Standard Operating Procedures (SOPs) that they are to employ during the period. While units in SP2 that are left alone for three to five turns will continue to execute "opportunity fire" within designated range bands, they will not move.

When we assess the perceived needs and our intent in using TacOps, it is in my opinion the simulation that best supports the tactical professional development training that we must conduct. TacOps is not however, the "silver bullet" to all of our training requirements, nor do we intend it to be. It, like any other desk top simulation or game, comes with its own set of strengths and weaknesses. For example, I believe that SP2 is a better tool than TacOps to use to reinforce training at the platoon level and lower TTP, the employment or breaching of obstacles and the crossing or defence of water obstacles. In the end, we must simply learn to use all of these simulations or games, like any other training aid, to help us deliver the most effective training possible and, if at all possible, to have fun while doing so.

Captain R.W. Bachynsky, the G3 Range Control Officer at the Combat Training Centre, writes:

I read Captain Johnstone's "Deep Operations, The Key to Success" with great interest and alarm. While I agree that deep operation should receive greater emphasis at the Canadian Land Force Command and Staff College and during other conceptual training opportunities, the

agreement ends there. First of all, the very definition of the close fight means it is prosecuted by the brigades or brigade groups in contact. As is rightly explained, the deep battle is the responsibility of the Deep Operations Coordination Centre (DOCC) at division and higher

headquarters. Adding another task to the brigade merely serves to distract its energies from the primary mission of the close fight. Members of the combat arms should be aghast at the suggestion that the close support artillery regiment support deep operations at their expense. Rather than gaining new tasks, the field artillery would be better served by gaining improved systems to fulfil its primary mandate. We must give credit to the doctrine writers who selected the term "*close support* medium

regiment" by design and purpose. To encumber the regiment with additional staff and unmanned aerial vehicles would not be as beneficial to the brigade as purpose built Forward Observation Officer variant vehicles or a fourth battery of guns. Fiscal reality dictates that we concentrate on the level that we can realistically fight at—the brigade group.

As far as training is concerned, the combined arms integration necessary to conduct effective close support is by far the greatest challenge to the field artillery. Training should therefore concentrate on perfecting relations with the supported arms. The use of an artillery regiment in the general support role responding to higher direction is the simplest of all tasks. The additional skills and training required to conduct deep operations are at the higher formation staff level, hence the creation of the DOCC. Further distracting the close support regiment operations staff by having them look deep is redundant in the big picture and counterproductive to their primary task.

In summary, our doctrine and training must guide our existing force capabilities and reflect fiscal reality. Rather than chasing concepts and assets that rightly belong to higher formations we should concentrate on the basics of improving the capabilities and training of our existing brigade groups.

Sean M. Maloney, Ph.D, of The Royal Military College of Canada, writes:

SOFT POWER IS HARD POWER

I would like to amplify some of the ideas expressed by Colonel Bernd Horn in "Burn the Witch: A Case for Special Operations Forces" (SOF). The most important battlefield attributes of SOF (the "battlefield" can be liberally interpreted here to include the asymmetrical battlefield too) are the fact that they are high-tech, highly mobile both in a strategic and tactical sense, they have a high degree of training and initiative, and they exhibit a high level of readiness.

The argument hardly needs to be made that Canada will continue to project power overseas in a variety of forms, one of which will be military force, with the overall goal of protecting Canadian interests. If the threats to those interests are asymmetrical in nature (and there is no real argument to be made against this)[1] then it is equally clear that Canada has to have the means to meet such threats at home and abroad. To paraphrase the French revolutionary warfare theorist Roger Trinquier, there are anti-tank weapons to counter tanks, ballistic helmets and frag vests to counter bullets, surface-to-air missiles to counter aircraft; SOF are needed to counter the asymmetric threats.

In addition to the immediate value of having the means to combat these new threats, SOF are increasingly critical in future coalition operations. The new document *Canadian Defence Beyond 2010 The Way Ahead: An RMA Concept Paper* born by Cesarean Section and mothered by the Revolution in Military Affairs (RMA) Operational Working Group, accurately states that:

We cannot assume that the injection of a symbolic presence into future operations will afford us operational influence. It will not. Operational influence, which in turn translates into international influence, demands that Canada continues to contribute a relevant force where it chooses to make a military commitment. If Canada expects to exercise influence within the alliances and organizations to which it belongs, salient and relevant force contributions to future operations are a must. Recognizing that we cannot deploy numerically large forces, we must guarantee salience through providing relevant forces that have a high level of training, professional competence, and equipment that is equal and better than Canada's coalition partners.[2]

Canada has a strategic tradition of providing salient land contributions to coalition operations,[3] be it the high-intensity operations with the Canadian Corps of the First World War, deterrent operations with 4 Canadian Mechanized Brigade Group in the 1960s, or peacekeeping/peacemaking operations with CANBAT I and II with the United Nations Protection Force (UNPROFOR). SOF can augment and enhance conventional forces in such operations, which in turn increases the saliency of those forces.

It is hard to find a Western-led coalition operation conducted over the

past ten years that has not incorporated SOF into its force structure. Even many UN operations have had SOF operate alongside the peacekeepers: UNPROFOR II and the United Nations Mission in Haiti (UNMIH) are but two examples. UNPROFOR II had SOF from Canada, the United Kingdom, and most probably France, Spain, and Sweden, while US Special Forces were employed in a wide variety of roles during the various Haiti operations.[4]

SOF attributes are ideally suited to the Canadian need to achieve saliency in coalition operations. In addition to filling critical operational functions, SOF operations tend to be visible to coalition theatre commanders.[5] Small numbers are an asset, not a liability, given the nature of the job. There can be no doubt that, when employed properly, SOF cannot be considered a mere symbolic contribution to a coalition.

The use of British SOF during the Gulf War is an instructive case study. The British national commander, General Sir Peter De La Billiere, in addition to ejecting Iraq forces from Kuwait, was faced with the need to maintain British prestige and presence in the Gulf for political and economic benefits. Consequently, every opportunity was taken to ensure that, despite numerical inferiority, British forces did not play second fiddle to American forces. This in turn affected how the British conventional air, land, and naval forces were employed. On the land side, De La Billiere then pushed General Schwartzkopf to employ SOF on a wider scale than the skeptical American commander wanted, which in turn had an effect when De La Billiere wanted to alter the operational role of the UK armoured division later on.[6]

Consequently, the bulk of 22 Special Air Service (SAS) Regiment was brought into the Gulf. The Regiment was employed on operations deep in Iraq. Formed into self-sustaining mobile columns and small long-range heliborne patrols, SAS forces attacked missile convoys, disrupted Iraqi command, control, and communications systems, and gathered technical, operational, and strategic intelligence.[7]

Like all SOF operations, the exact military effect of SAS operations on the conduct of the war, as well as those of their American SOF counterparts, is and will forever be the subject of great debate, much like debates over strategic air campaigns in the Gulf and over Serbia. The *perception* of the coalition commanders, the politicians, the press, and the public at the time was, however, that the use of SOF to destroy SCUD missiles and related facilities assisted in preventing Israel from entering the war against Iraq and destroying the fragile coalition. This perception was used for political currency by the Major government in public pronouncements about SOF activities, which could not have failed to have an impact on Britain's strategic position amongst the Gulf states given the fact that SAS provided executive protection services and other high-profile training to their leaders.[8] The political and economic dividends of the employment of British SOF both before and during the Gulf War are incalculable in this critical region.

In Canada's case, the ability to conduct independent non-alliance operations is necessary for the furtherance of Canadian interests overseas. Canada is a sovereign nation with such interests. It must have the ability, for example, to rescue Canadians held hostage in Ecuador, to conduct strategic recce missions prior to the insertion of humanitarian aid forces, or even to collect strategic, operational, and technical information in a hostile environment like Kosovo.... We must recognize that SOF, of course, can never replace conventional forces. Is deploying Joint Task Force 2 to quell a mass demonstration feasible? How about laying sandbags in a flood, protecting aid convoys in a famine-ravaged African nation, or achieving a decisive result on the battlefield in an armour-heavy environment? Clearly not. What Canadian SOF will provide is a salient contribution to coalition operations and a highly-skilled, rapidly-deployable force to meet a variety of legitimate world-wide contingencies.

ENDNOTES

1 See, for example, Directorate Land Strategic Concepts Report Number 99-2, *The Future Security Environment* (Kingston: DLSC, August 1999); Directorate Land Strategic Concepts DLSC Research Note 9901, *In the Arena The Army and The Future Security Environment* (Kingston: DLSC, February 1999).

2 RMA Operational Working Group National Defence Headquarters, *Canadian Defence Beyond 2010 The Way Ahead: An RMA Concept Paper* (Ottawa: NDHQ, 31 May 1999), p. 8/42.

3 Sean M. Maloney and Scot Robertson, "The Revolution in Military Affairs: Possible Implications for Canada," *International Journal* Vol. LIV No. 3 (Summer 1999), pp. 443-462.

4 Cameron Spence, *By All Necessary Means* (London: Michael Joseph, 1998); Scott Taylor and Brian Nolan, *Tested Mettle: Canada's Peacekeeper's at War* (Ottawa: Esprit de Corps books, 1998).

5 See Sir Peter De La Billiere, *Storm Command: A Personal Account of the Gulf War* (London: Harper Collins, 1992) and H. Norman Schwartzkoph, *It Doesn't Take a Hero* (New York: Bantam Books, 1992).

6 Ken Connor, *Ghost Force: The Secret History of the SAS* (London: Weidenfield and Nicholson, 1998), p. 310.

7 See Cameron Spence, *Sabre Squadron* (London: Michael Joseph,1997); Mike Curtis, *CQB: Close Quarter Battle* (London: Bantam, 1997) Chapters 14-19; Peter Crossland, *Victor Two* (London: Bloomsbury, 1996); Andy McNab, *Bravo Two Zero* (London: Bantam, 1993).

8 Douglas C. Waller, *The Commandos: The Inside Story of America's Secret Soldiers* (New York: Simon and Shuster, 1994). See particularly Ch. 10, "The SCUD Hunt"; De La Billiere, *Storm Command* Ch. 9; Connor, *Ghost Force* Ch. 15; Michael R. Gordon and Bernard E. Trainor, *The General's War: The Inside Strory of the Conflict in the Gulf* (New York: Little, Brown and Co., 1994) Ch 11, "The Great SCUD Hunt."

Commentary on the Future of the Armoured Corps and the Combined Arms Team:

Major Dave MacLeod, is the armour section head at the Directorate of Army Training writes the following on the Special Feature on the Future of the Armoured Corps and the Combined Arms Team, Volume 2, No. 4, Winter 1999/2000 :

REALITY, THE OTHER SIDE OF THE COIN

Upon reading the articles in the last issue of the *Army Doctrine and Training Bulletin*(ADTB), I was interested yet worried about what my peers and superiors in the Armoured Corps were advocating. While I was interested in the views on whether or not we should go to a lighter "Cavalry" role I became worried. Worried, because while reading the articles I was imbued with a feeling of fatalism that seems to be pervasive in our Corps today. Something to the effect we won't get any additions to our tank fleet so why not just go with what we have and try to make it work.

People seem to be forgetting the importance of the role of armour in winning a fight; it is simply not an arm that just shows up. As well, people seem to be making some pretty big assumptions on how, in some future conflict, our allies will welcome us with open arms on the big day *when we show up to protect their flank*. I was particularly concerned by the following excerpt from Major Branchaud's article: "I believe that our doctrine does not reflect the reality of our present day Army.[1]"

In my small contribution, I will try to provide some arguments about why I feel that this comment should be stated conversely and to try to shore up the support side for a heavier approach in the Armoured Corps.

WHAT ARE WE TALKING ABOUT?

Doctrine should drive everything in a professional army! Everything from our structure to the weapons we carry and the way we fight. Sadly, in our Army the almighty dollar or shortage thereof, has driven many important decisions and may continue to do so for the foreseeable future. However, we need to get back to basics in the argument.

In his article Major Steve Bowes[2] has eloquently covered the objectives of Canada's foreign policy and the trends with respect to the employment of military forces and Canada's role in the world's security environment so I will not repeat it all. Let us just say that national policy, including foreign and national security policy, creates the requirement for an army and it's doctrine. Documents such as *The Land Force Strategic Direction and Guidance*[3] tell us what our tasks are going to be and what forces we have to have trained to meet our commitments, both domestic and internationally. When I checked, one such task was to have a: "contingency brigade group (or three separate battle groups), not sustained (in terms of rotations), of which one battle group is to be a vanguard capable of deploying after 21 days of preparation and warning, and which is to be sustained indefinitely.[4]"

As this task stems from the directives from the government, we have to assume that the government has the will to commit soldiers to fight if the need arises. Any commitment will probably be as part of a coalition but nevertheless, we have to provide what the directive says we have to provide. To be sure, if the old saying is true and history repeats itself, then we can look forward to the day when we will in fact go to war.

Due to this country's will to send it's soldiers to war (five times in the twentieth century), we have to be ready. Our preparations are all founded in doctrine, which flows from the types of tasks that our government gives us, which in turn stems primarily from the international situation. As Major Bowes stated so adroitly when he spoke of the emerging trends in the international security environment and in military affairs, "These trends will pose interesting challenges for Canada as a G8 nation with one of the world's largest economies. Canada will find it increasingly difficult to remain on the sidelines of any operation that clearly involves a threat to NATO or international security.[5]"

Therefore I believe that we will be involved in a conflict somewhere down the road that will go beyond peace enforcement or peacekeeping. I am also of the opinion that our allies such as Great Britain or the United Sates of America may not be so willing to have us show up with forces that are not prepared to bear the brunt of some of the heavier fighting. I believe that they will expect us to show up with at least a brigade group as espoused in our doctrine, and will not be satisfied with us merely protecting a flank.

Sadly, the situation in our Army is grave! We have lost the ability in our brigades to practise manoeuvre, and perhaps Manoeuvre Warfare. We have lost it because the primary tool that we use to mass "direct" fire, the armoured regiment, has been denuded of that very thing. The articles in the winter 1999/2000 ADTB describe better than I can what our armoured regiments are comprised of today. Suffice it to say that we lack the ability to mass "direct" fire of

sufficient calibre to defeat modern main battle tanks (MBTs) in any great number and we lack sufficient numbers of squadrons to form "armoured battle groups" which enable us to manoeuvre on the ground.

We have adopted the "manoeuvrist approach" as part of our doctrinal "upgrade" and we are in the process of much needed further updating. While I do not claim to be an expert at the manoeuvrist approach, I know that to win on a modern battlefield, you have to manoeuvre (I know, Lieutenant-Colonel Oliviero, it is not the same thing). But the manoeuvrist approach demands that we seize the initiative from the enemy and to do that, you need to mass "direct" firepower at a critical point and "punch" when you need to.

I often wonder while reading *Jane's Defence Weekly* or other like publications, whether or not some of the countries developing and improving their own or someone else's MBTs will be the countries we will be fighting against when we get the nod to go. Well, you can bet that they will have some doctrinal basis to their way of doing business and they will have also read the lessons learned about Desert Storm. I suggest that our future enemies might just have the will and the training to try and seize the initiative from us and will try to do so. At the risk of repeating myself, I believe that our allies will want us to

be there with more than a "light" or "Cavalry" force protecting their flank.

Our doctrine says we need tanks. I believe our allies will insist on our having tanks. I believe that the threat demands that we have tanks. I believe our infantry brothers will follow us on to an objective more readily if we have tanks. Actually, if we don't, why have us around at all? The problem as I see it is that because someone somewhere came up with the politically acceptable terms Armoured Combat Vehicle (ACV) and Direct Fire Support Vehicle(DFSV), everyone now is losing sight of the "reality" of how we are supposed to train in accordance with our doctrine.

THE FUTURE

To go down the Cavalry road is to take a dangerous path. Perhaps someday we will go that way if the government changes our role or tasks. For now, we have to be prepared to take "armour" to the field and use it like it is supposed to be used. That means that we should be banging on our general's doors with demands to tell the government that we need more, dare I say the word again, this close to Ottawa, "tanks". A minimum of two squadrons per regiment would be barely acceptable; three would allow us to train realistically.

We cannot change our doctrine just because our equipment procurement has not kept pace with its demands. Our

roles and tasks as issued by our government might cause our doctrine to change. The reality of what we are fielding in the army now has little to do with it other than to bring to light the shortcomings of our equipment and structure. Let us equip our soldiers to "win" a fight. Let us start by giving the Armoured Corps the tanks it needs to manoeuvre and punch the way it is supposed to. Lastly, let us give it more tanks so the first time our infantry attempt to destroy a well prepared defensive position with tanks on it, all of the LAVs don't get destroyed before the soldiers even dismount!

By the way, can anyone tell me what a "Recce Battle Group"[6] is?

ENDNOTES

1 Major Charles Branchaud. "Let's Face Reality", Army Doctrine and Training Bulletin, Volume 2, No. 4, Winter 1999/2000, p. 116.

2 Major Steve Bowes. "The Case for the Light Cavalry Regiment for Canada's Army". Army Doctrine and Training Bulletin, Volume 2, No. 4, Winter 1999/2000, pp. 107-115.

3 *Land Force Strategic Direction and Guidance*, Part 1, Section 2 para 4a.

4 Ibid,

5 Bowes, p. 108

6 This question is based on discussion in Branchaud, "Let's Face Reality", p. 117.

Our readers have submitted for consideration the following opinions:

Lieutenant-Colonel Chuck Oliviero (Retd) of the Joint Command and Staff Training Centre writes:

TIME TO FIGHT A SMARTER ENEMY

The Roman adage is well remembered and oft quoted. Unfortunately, the Josephus' lesson is even more often ignored. For decades, in concert with our NATO allies, the Canadian army has been fighting Fantasians, Krasnovians or Granovians in order to keep tactical fighting skills alive. Whatever their political stripe, these enemies have invariably been mechanistic, unimaginative military automatons trapped in a tactic doctrine that allows very little flexibility or freedom. The battle tactics that these generic enemies have used against us so that we could practise our own tactical skills, although originally based on Soviet tactical doctrine, always made the enemy completely predictable, doctrinally hide-bound, and bloodthirsty to the point of being war criminals. Decades of facing such a dull enemy has caused Canadian officers to become accustomed to beating these unimaginative fellows,

thereby lulling themselves into believing that their own tactical abilities were razor-sharp. Unfortunately, this fantasy may one day come crashing down all around us and Canadians may be forced—yet again—to relearn the difficulty of fighting an intelligent, well-trained adversary.

Future Canadian blood need not be spent learning lessons that could be learned now. A small investment now will pay handsome dividends later. A more realistic and honest appraisal of how the army trains itself is required. It is time to review the battle tactics of our generic enemies. It is time to arm them with the best available doctrine, with the best officers and senior non-commissioned officers. It is time to make them the worthiest of opponents. Training to beat a second-class opponent may be comfortable and easily orchestrated, but it is, at best, a pyrrhic victory. Only if we train to beat the best can we be certain of our ability to fulfill the mandate of national defence. If the armed forces really are the option of last resort, then there is both a moral and a professional obligation to be prepared for any future conflict. Not to do so risks discovering too late that the emperor has no clothes.

Several years ago, the Land Force finally adopted the doctrine of Manoeuvre Warfare. This was both a necessary and an intelligent break with the tactical past. Oddly, our enemies did not do the same. With the collapse of the Soviet Union and the dissolution of the Warsaw Pact, NATO armies had to "redesign" a generic enemy. Here was an opportunity to abandon the dullards we had been fighting for years! Both the US and British Armies gave this problem a great deal of thought and produced a "new" enemy against whom we could hone our warfighting skills. Sadly, this "new" enemy looks depressingly similar to the old, a case of old wine in new bottles. If you understood how the Fantasians fought in the 1960s, then you already understood how the Granovians fought in the 1990s.

It would seem that Canadians feel obliged to follow the lead of our larger NATO brethren. Our generals should perhaps be compelled to read Barbara Tuchman's *The March of Folly*. After all, if the Soviet Union and the Warsaw Pact have been defeated, why are we still practising their destruction?

The Romans are sure of victory for their exercises are battles without bloodshed, and their battles are bloody exercises.

—Josephus

Even the new Russian Army no longer adheres to the outdated tactical doctrine we *still* ascribe to the Granovians. No need to call the Special Investigation Unit. This is hardly a secret. Even before the break up of the Warsaw Pact most of the tactics we still blindly make them use had been given up. When was the last time that the enemy *did not* attack in echelons? We have the pleasure of having ex-Warsaw Pact officers as students in our own staff colleges, and yet we refuse to learn from them. A pleasant conversation with them over a cup of coffee is enough to open the eyes of anyone interested enough to ask about their tactical doctrine.

Lately military officers have come under a lot of criticism. Much of this criticism is not deserved—but some is. The old saw that generals are always preparing to fight the last war is not without a grain of truth. The past is, after all, a known quantity. It lies solidly within the "comfort zone." It is therefore easy to delude oneself into thinking that looking backward is an appropriate use of history as an instructional model. But beware the incorrect application of historical lessons! The correct use of history would indicate that most of what we have learned from yesterday will be nothing more than a basis upon which to build for the future. What this *should* tell us is that we must train to live with uncertainty and that the best way to do this is to train to beat the most cunning, ruthless, and best-equipped adversary possible.

Some would say, "If it ain't broke, don't fix it!" Surely this point of view has some merit, but how does one know that "it ain't broke"? Before fighting the Viet Cong, no American soldier would have believed that the world's most technologically advanced nation could be humbled by men in black pajamas and running shoes. But they were. To the credit of the Americans, their defeat taught them that they needed to change their outlook on warfighting. This is, of course, a military truism. Armies learn more from loss than they do from victory. But this need not be so. Just because Canada has not yet been humiliated in combat does not mean that we cannot learn from others. It is a smart man who learns from his mistakes. But it is a smarter man who learns from the mistakes of others.

Years ago, during my tactical education, a field officer explained an exercise that the Israeli Defence Force supposedly ran for its combat team commanders. Students were given a tactical problem whereby they were to defend a piece of ground with their combat team from an enemy force approaching from the west. They were told that the enemy would appear in two hours and that they were to go and prepare a detailed plan for later

discussion. Shortly after the students would begin their combat estimates, the Directing Staff would come back and tell them that the enemy was no longer approaching from the west but rather from the east and, oh yes, they would be arriving in fifteen minutes. I cannot vouch for the veracity of the story, but even if it is apocryphal, it is worthy of note. The lesson is clear. The enemy cannot be counted upon to behave in a predictable manner. If you would call yourself a leader, then on top of all of the tactical skills you must also be able to *out-think* your opponent. Otherwise, he will destroy you.

If it is true that whatever war an army prepares for will not be the one that it fights, then it follows that an army should prepare for battle by training to fight its worst possible enemy and not some second rate has-been. If our new doctrine really were the best available (and I believe that it is), then that worst possible enemy would be one that was armed with *our* doctrine! Preparing to fight an enemy who would always attempt to disrupt, dislocate or pre-empt us would force us to do two things: it would force us to better understand our own doctrine and it would prepare us for all eventualities.

To be fair to the US Army, they have made great strides in adopting a smarter way to train. Their extensive use of their National Training Centers has taught two generations of field commanders to expect a wily enemy capable of almost anything. Company, battalion, and brigade commanders regularly undergo ego-crushing defeats. The army's leadership culture has had to adjust from its previous mentality of "zero-fault" and come to accept that eight out of every ten commanders is humiliated his first time through the gauntlet. Instead of belittling their trainees (whether

sergeant or colonel), the trainers create an environment where the same mistakes are not permitted twice. Knowing that there is a smart, highly trained, and highly motivated enemy force waiting to kick your butt is a powerful motivator, and anyone who has watched a combat team or battle group undergo this training is left deeply impressed by the value of such training.

But when was the last time a Canadian unit trained by fighting a smart enemy? Fighting an enemy wedded to echeloned forces and predictable orders of battle is akin to teaching current infantry to form into standing and kneeling ranks in order to fire rifle volleys: interesting, well within the "comfort zone," and a recipe for disaster. Surely this is not rocket science. To be the best, you must be able to beat the best.

Most of the future cannot be predicted, but some can. You don't have to hold your hand over an open flame to know that you will get burned. It does not require Nostradamus to foresee that any major future conflict will not involve the tactics currently practised by the Granovians. The limited benefit provided by learning to fight against this outmoded doctrine is easily outweighed by the detriment of not knowing how to handle a professional, clever, and determined enemy. If, however, we teach ourselves to fight a highly flexible, innovative, and deviously clever enemy – one that behaves as we say we will—then however any future real enemy behaves will not come as a surprise. Should, for some reason, the next conflict pit us against an enemy stupid enough to use the outmoded and rigid tactical doctrine currently used by the Granovians then all the better since the victory

will be cheap in terms of time, toil, and treasure.

If we are agreed that it is in our own best interest to train against a smarter enemy, then let us go one step further. Not only should we give our generic enemy our doctrine, we should also give it our equipment and our structure. The benefits of this should be obvious. If we profess to organize, equip, and fight in the best way possible, and our enemy is a mirror image of us, then any weaknesses in our tactical system will become readily apparent. At the same time, it will force all of us to better understand our own doctrine in order to find any kinks in the armour of our opponents. Victory will then not depend upon having a better fire control system or a more sophisticated command, communication, and control system; victory will depend on *leadership*. The proof of the pudding is in the tasting. If our leadership really is the best, then we should relish the thought of meeting an enemy trained, equipped and organized like ourselves. If, on the other hand, we have no confidence in our ability to win, the only logical conclusion must be that our leadership training is lacking.

Like the move to Manoeuvre Warfare, the adoption of a new training philosophy will require us to re-evaluate some of our beliefs. Allow me to use a personal example. As a squadron commander and later as a commanding officer, I used to encourage my subordinate tank commanders to actively seek out the meeting engagement. Anyone even vaguely familiar with our tactical manuals will know that this was heretical. The manuals clearly proscribed the meeting engagement: Thou shalt avoid the meeting engagement! But my logic ran thus: if you had better weapons, better

training, more initiative, and better leadership than an opponent, why would you not actively *seek* a meeting engagement? All of the cards were in your hand. Suddenly coming up against a surprised enemy and being armed with all of the above advantages could only mean victory for you. If, however, you were afraid of the meeting engagement, then you were clearly not as proficient a tactical commander as you believed you were. After explaining the rationale, I then encouraged force-on-force training. Squadron commanders and sergeants-major watched troops manoeuvre against each other; the regimental sergeant major, operations officer, and I watched squadrons pitted against each other. In one case we had the good fortune to test our skills against troops (equivalent to Canadian squadrons) from 11 US Armored Cavalry Regiment, the famous defenders of the Fulda Gap. The resultant training was both enlightening and electrifying to watch, and it was gratifying to watch my outgunned and more poorly equipped soldiers best their American counterparts. To his credit, the American commanding officer was so impressed with the effect of this training that he asked to rotate all of his troops against my squadrons so that they might all benefit from a tactical loss at the hands of troops with inferior equipment but superior tactical acumen. Both sides learned valuable tactical lessons and many friendships were cemented with a good-natured After-Action Review.

One might ask if fighting a "Red Force" equipped like NATO would not throw our entire clan of G2 officers into a tizzy. They have, after all, become the high priests of Granovian doctrine. They earn their keep by telling commanders what they can expect to see next, what this is likely to mean, and, if they are good at their jobs, what the enemy is likely to do next. But given the limited and highly orchestrated nature of the doctrine we have ascribed to the Granovians, this is hardly a challenge for them; they are merely reading the dance card. If, on the other hand, the enemy were capable of grouping and regrouping at will (as we are) and if the enemy were able to do almost anything next, then the G2 would truly be challenged to offer his commander valuable insights into the structure, disposition, and intentions of the enemy force. Any G2 worthy of his title would surely relish such a challenge. The skills, training, and intuition garnered from the study of the trade would pit his wits, on behalf of his commander, against those of the enemy G2 doing exactly the same thing. The professional intelligence community knows only too well how unpredictable a future enemy might be, and I can only imagine that this community, above all others in the military, would welcome a smarter and better-equipped enemy.

In closing it should be noted that our army has been around this block several times before. Anyone who reads any military history of the First World War cannot help but become dismayed and frustrated by the seeming rigidity of the Allied High Command and its almost blind insistence on the use of frontal attacks. We must, of course, be careful. Hindsight is invariably unfair to the subject of the investigation. Students of history must be ever watchful only to look forward down the arrow of time. One must always try to see what the protagonists saw. In the case of the First World War generals, their training, professional study, and leadership skills did not prepare them to do other than what they did. We can but pity the soldiers who paid in blood so that future leaders could learn. But did they learn? Remembering the axiom that victorious armies tend to learn less than defeated armies, one cannot help but be struck by the different lessons learned by opposite sides of the same battles. The French and British took completely different lessons from the First World War than did the Germans. The development of armoured warfare tactics is only one example (but let us save that for another day).

The Spanish philosopher and Harvard professor George Santayana warned us almost a century ago that those who refused to learn the lessons of history were doomed to relive its mistakes. With Santayana's admonition on the use of history offering a clear warning to us, do we not risk becoming the object of some future reader's pity? Do we not daily run the risk of being fully ready to fight the *last* war? Can the Land Force truly fulfil its professional mandate of being ready to fight the next war? We claim to be ready to fight against the best alongside the best. But only by being able to beat the best can our army claim to be the best. As dollars become ever more scarce and resources ever more valuable, does it not make increasing sense to make a more concerted effort to become more professionally proficient? Opportunity is knocking at the door. The Canadian army has proven time and again that it has the world's most able soldiers; should they not be afforded the world's best tactics?

Commentary, Opinion and Rebuttal

IS ANYONE OUT THERE…?

GETTING DOWN TO EARTH: WHY THE LAND FORCE NEEDS SPACE DOCTRINE

Captain Andrew B. Godefroy of the Canadian Land Force Command and Staff College and the Directorate of Space Development

The main purpose of doctrine is to provide fundamental principles by which a military force can guide its actions in support of assigned objectives. Doctrine can be authoritative but, like all things military, it requires a good degree of judgement in its application. It has been said that doctrine is best forged in the heat of combat and tested in the crucible of war. This may be true; there are many historical experiences throughout the last two centuries that have influenced the development of Canadian military doctrine in this manner. However, Canadian military experience in some areas, such as space operations, has been very limited. The absence of space lessons "forged in the heat of combat" means that Land Force space doctrine has had to rely more on progression based on anticipated developments in war fighting rather than past experience alone. However, the true challenge to developing Land Force space doctrine is twofold. First, the Land Force needs to be educated in what space operations are and how space support affects military operations on land. Second, the Land Force needs to understand that the term "joint" does not abolish its own responsibility for developing a solid Land Force space doctrine and training programme. Once these obstacles are overcome, the Land Force can truly begin to integrate space into its day-to-day operations.

The first question one asks is why does the Land Force need space doctrine? It has operated with varying degrees of success since 1957 (the year the Soviets launched *sputnik*) without space doctrine. Given the limited training time for soldiers and the realities of material constraints and shrinking budgets, should the Land Force concern itself with space when there are so many immediate operational priorities? Besides, why should the Land Force concern itself with an issue that is handled at the joint level? These are just a few of the usual retorts when the issue of space is raised.

To a large extent the Land Force has based its doctrine on the basic principles of warfare. These principles, however, have been significantly altered by space power. For example, the principle of attaining surprise has been deflated due to the fact that most, if not all, future land operations will be conducted under the scrutiny of detailed, high-resolution satellite observation. Whereas in the past one could manoeuvre large elements out of sight of the enemy, conducting such manoeuvres today is increasingly difficult, if not altogether impossible. Having local air superiority no longer ensures that the enemy is blind to your actions. Space is not subject to claims of sovereignty by any nation. Because there is no legal definition of where the earth's atmosphere ends and space begins, satellites in orbit can fly freely over the territory of another nation without permission and often without hindrance. Multi-spectral imagery and remote sensing technology also defeats most conventional camouflage, concealment, and anti-detection methods, thereby forcing the commander to reconsider his plan when attempting to achieve surprize. Space assets do not completely nullify the ability to attain surprize. They do, however, facilitate an enhanced level of battle space awareness, thereby necessitating the development of doctrine to counter space power threats.

Manoeuvre on land has also been greatly affected by space power. Armies, which once relied on the theories of von Moltke to mass armies, have become increasingly reliant on Global Positioning System (GPS) technology to manoeuvre modern armour and mechanized infantry and bring them together. This acceptance of GPS as a staple in land operations has led to a new form of warfare known as navigation warfare or NAVWAR. If future army weapons platforms and systems are going to incorporate GPS, then the Land Force must learn how to protect its GPS assets while preventing its adversaries from possessing the same capability. Modern GPS disruption devices are no bigger than a hockey puck and can degrade GPS signals over a large area. Future Land Force responsibilities may include the detection and destruction of NAVWAR weapons, much in the same way we presently picket and remove landmines.

Doctrine forms the basis on which an army commander will plan and execute his or her assigned missions. Space products improve an army's force projection capability, but without a doctrine the commander has limited ability, if any, to use space support to his or her advantage. Some may ask whether or not space doctrine for the Land Force is necessary given its present limited

application, but the answer is rather obvious. Indeed, there are many operational priorities, however most (if not all) of these operations rely on access to space assets for success. If the Land Force ever expects to go beyond the limited application of a force multiplier, it must learn how to integrate that multiplier effectively into its existing doctrine. Therefore, some general concepts need to be considered in order to assist the commander in meeting his or her space objectives in the land operations environment.[1]

The first step is education. Presently the Land Force has no formal space indoctrination courses for its soldiers, and at the officer level there is only one Enabling Objective on the subject under consideration for inclusion on future Development Period 2 course training. The odd officer may also attend the Basic Space Indoctrination Course at Canadian Forces School of Aerospace Studies at Winnipeg, but Land Force participation on this "Air Force" course has thus far been limited. There are some simple means of closing the education gap. Formal academic education and professional development for both officers and men is obviously the best solution, though, realistically, there is still a distinct lack of Land Force interest in devoting resources to such a commitment. A CD-ROM space power course distributed to all ranks in the Land Force is a feasible way to initiate the learning curve. The Americans have such a course already in their system for all airforce officers and army officers on joint assignments, though any officer who is interested may request the course package. This self-directed study package takes eight hours to complete and provides a good basis for further education. Additionally, officers at the company level and above

(essentially those responsible for the maneuver of larger units) are required to be made aware of the concepts of space support and those assets that will affect their commands.

The second step is the development of a Land Force space doctrine that is both realistic and specific to Canada's land operations environment. Hitherto, the prevailing attitude that space falls under the rubric of "joint doctrine" in Canada, and is therefore not the responsibility of any particular service, has proven to be detrimental to the development of force-specific space doctrine. The fact of the matter is that joint doctrine will only be truly possible once the each of the three forces has identified its space requirements and written doctrine to employ them. Ultimately, a joint space doctrine will evolve from the combined efforts of the Land, Maritime, and Air forces. In the meantime, what is the Land Force doing to meet this aim?

Land Force space support is best developed at incremental stages. In the near term, the Land Force can exploit existing space systems capabilities, such as commercial GPS, to its advantage. The Land Force can also exploit new applications, such as improved satellite communications, as they become available. Recent Canadian-US defence cooperation has resulted in the obtainment of dedicated access to an American global military satellite system. The Land Force should also be planning the use of future systems, as well as participating with the Air and Maritime forces in the development of joint space doctrine. Ultimately space assets are a force multiplier for all three forces, and the Land Force can only define its own roles better through cooperation and integration with the other two forces if it has taken steps to define what its role will be.

Space support to the Land Force will require a Command and Control System (CCS) architecture that is designed to support deliberate and crisis planning. Most importantly, it should provide situational awareness to all levels of the war fighter, from national command authority to the soldier on the ground. At the sharp end, space qualified personnel, organized into Army Space Support Teams (ASST) potentially drawn from existing and future G2 assets, will bridge the gap between the Land Force commander and the space assets providers at the national level. More serious and aggressive training and education programs will be required to meet all future needs. Space assets must be made available for training and operational activities at all levels. Combined with increased experience gained through stand alone and coalition force deployments, the Land Force of the future will be ready to incorporate the 'fourth dimension' of the battlefield.[2]

ENDNOTES

1 Presently, the literature on Canadian Forces space policy and doctrine is very limited. Two documents worth noting, however, are B-GG-005-004/AF-025 *Space Operations* (1998) and DND, *A Canadian Military Space Strategy: The Way Ahead for DND and the Canadian Forces* (25 February 1998).

2 Currently Canada gains most of its space operations experience through NORAD and OUTCAN exchange positions in the United States.

Millennium Woes

Captain R.J. Fowler of B Company
2nd Battalion Royal 22e Regiment

We have heard a great deal recently of the 21st century and the impact it will have on the Canadian Forces. In particular, many in the infantry have been debating the impact of the LAV-III project and the implications this "vehicle of the Twenty-First Century" will have. I do not wish to appear to be a pessimist, but I do not think that we are being entirely honest with ourselves. Frankly, the only twenty-first century aspect of the LAV-III is its delivery date in the year 2000. I am not an expert on this project, and I am quite sure that there will be many who are involved in it, either directly or indirectly, who will pointedly tell me that I don't know anything about this subject. But I also doubt anything written here will come as a surprise to anyone in the infantry. Furthermore, while the LAV-III represents a technological advancement, nothing about it is rocket science.

While the version that the Canadian Forces will receive is an updated and, arguably, superior model of the LAV, this vehicle was first introduced to the US Marine Corps about 10 years ago. By the time we have LAV-III battalions trained and ready to deploy with this vehicle (sometime in late 2000 or early 2001) over a decade will have passed since its debut in the United States. The technology, while advanced, is still twentieth-century technology. I may appear to be dwelling upon semantics, but perception is important. The reason that many people claim that the LAV-III is our awakening to the twenty-first century is that this perspective supports the theory that it brings monumental changes to our doctrine. I disagree. I do believe (as do many in the infantry) that over the past few decades our doctrine has become antiquated; hence the implementation of manoeuvre warfare doctrine. However, as much of a step forward as this implementation represents, like our old doctrine, it is not rocket science. While the technological advances in the LAV-III represent a considerable improvement over what we currently possess, it remains simply an improved asset that we can employ to achieve our end-state: to close with and destroy the enemy.

In this commentary I intend to present three main points. First, the LAV-III should not significantly change the way we do business, assuming that manoeuvre warfare is in fact the current method we employ to defeat the enemy. Second, its implementation should not necessitate any significant changes in the hierarchy of our rifle companies. Third, while the hierarchy of our rifle companies does not need changing, the manning level within the battalions does.

The doctrine that the Land Force has embraced—manoeuvre warfare and mission command—has been discussed at great length. This debate will undoubtedly continue until another change is introduced. The LAV-III will integrate quite effectively into this doctrine as it will amplify the infantry battalions' combat functions such as firepower, manoeuvrability, and protection to a degree not previously witnessed. Unlike the M-113, it is a vehicle with which we will be able to fight as opposed to merely providing limited protection while moving from point A to point B. Gone are the Zulu harbours—the times they are a changin'. Or are they? I don't recall using Zulu harbours much. During any mechanized attack in which I have participated, our vehicles always accompanied us, especially if tank support was lacking. Will the LAV-III really change our doctrine significantly? Or, rather, will it change some of the mechanics (i.e., tactics, techniques, and procedures [TTPs]) of war-fighting and amplify certain characteristics of our recently adopted doctrine?

I doubt it will change the manner in which we conduct defensive operations either. I would like to use our battalion's recent defensive training during Exercise LION INTREPIDE 98 as an example. Some people may questioned the validity of leaving vehicles, even the comparatively inferior Grizzly, in hides rather than on a defensive position. It is true that, whether a Grizzly or a LAV-III, the vehicle offers a decided advantage with respect to firepower, not to mention communications and mobility. However, in view our new doctrine, I believe that the commander on the ground must retain the flexibility to decide based on his estimate. I believe it would be folly to simply declare that vehicles should automatically be on the position as much as it would be erroneous to declare that they should be left in a hide. A commander will determine the deployment of the unit's vehicles based upon an appreciation of the situation. Furthermore, a subordinate commander should not be expected

to go out of his way to rationalize to his commanding officer why his vehicles are not on the position as much as he should rationalize why they *are* on the position. There are advantages to both options. If the vehicles are on the position, they will be susceptible to preparatory bombardment, which is a certainty if we are facing the enemy we currently train to defeat. Secondly, once the main assault begins, these vehicles are committed to the battle and would increase their vulnerability were they to attempt to leave the position to perform other functions. Finally, vehicles positioned elsewhere can perform a variety of reserve functions, including counter-moves such as counter-attacks, blocking or reinforcing. The crucial point is that, whether a battalion is equipped with M-113s or Grizzly, the introduction of the LAV-III will bring no doctrinal changes other than we will be able to perform these operations more efficiently. The LAV-III may change some factors within an estimate, perhaps even significantly, but I believe that the impact on doctrine will be minimal.

One of the discussions which has recently arisen is the role of the commander at various levels. Should a platoon commander be expected to dismount from his vehicle during the assault? What about the platoon second-in-command (2IC)? Who will command the Zulu vehicles? Must we actually have hard and fast rules to apply? Personally, I would not expect a platoon commander to dismount on all assaults. A LAV-III provides a commander with improved mobility, firepower, communications, and thus greater flexibility than a dismounted commander would possess. These factors combine to reduce the mounted commander's vulnerability. This doesn't mean that he should never dismount (nor does

that encourage "leadership from the rear"). It does, however, beg the question, do we need a hard and fast rule? Or rather, should we instruct fledgling commanders on the advantages and disadvantages of both options, and then permit them, based upon the principles and fundamentals that govern our profession, to arrive at a logical decision? It wasn't rocket science before, and it isn't rocket science now.

While I can envision the impact and change brought about through the implementation of manoeuvre warfare and mission command (when we actually employ this doctrine, as opposed to merely paying lip-service to it), I do not believe that the LAV-III will significantly change how we will fight in the future. What is significant is the added advantage that it brings to the battlefield as well as the increase in the consumption of resources such as fuel and munitions. Moreover, our training requirements will increase as a result of gunnery courses and the need to implement continual training to keep our skills honed. The financial burden on units will increase substantially because of lengthened Primary Combat Function course cycles, consumption of resources, and the requirement for advanced field firing applications. To attain the training standard required, units will require larger training budgets and more personnel.

My second point concerns the proposed changes to the rifle company organization. This is the proposed introduction of a battle captain in each rifle company and a LAV-III sergeant in each platoon. The specific duties of these two new positions are somewhat unclear to me, as they are, I believe, to a great many people. I believe the reason for this

is that we are placing the cart before the horse: these positions were created prior to identifying an actual need for them. Our LAV-III conversion cell recently distributed the proposed organization chart for the LAV-III rifle companies. No one was able to explain to me exactly what we expect of the people filling these new positions. If my first proposition that our doctrine will not change significantly is correct, it stands to reason that significant changes to the composition of the rifle company is not particularly necessary.

It is true that the company echelon, as well as the role of certain troops, must change as specialized training in gunnery becomes vital. We will require greater transport as our ammunition and fuel requirements grow. Rifle companies will also have greater need for fire control systems, radio technicians, and an expanded echelon to cope with greater consumption of resources. However, is there a need for a sixth officer in the company and a fourth sergeant in each platoon? Some comparisons have been made to the armoured corps. I believe these to be misleading. First and foremost, the LAV-III is not a tank. It is an infantry fighting vehicle. The role of the infantry has not changed, nor do I believe that anyone considers that it should. It is true that we will have increased capacity to perform certain tasks, but our role and characteristics will remain unchanged. An armoured squadron has four troops. Their ability to separate into a squadron (-) and a half-squadron necessitates the requirement for an additional officer to command the half-squadron. Unless we are proposing to add a fourth platoon, this requirement will not exist. If a mechanized company without tank support uses a platoon of LAV-IIIs in a fire-base, I am confident that a platoon commander

is more than capable of accomplishing the task.

What exactly is the fourth sergeant in each platoon supposed to do? Is he to be the master gunner in the platoon? Why could the platoon 2IC or senior section commander not fill this role? Some have proposed that this sergeant would remain to command the Zulu vehicles. Could not the Platoon 2IC fill this function? It would certainly aid him with ammunition redistribution and casualty evacuation.

More important, however, than questions concerning these leaders' responsibilities is the question of where, exactly, are we going to find these soldiers? The state of my company as we embark upon four weeks of winter warfare training, including patrolling exercises at company and battalion level, is not encouraging. On paper, we have 88 soldiers all ranks. A total of 15 are attached on course or task outside the unit, including nine soldiers of master-corporal rank or higher. With personnel on light duties, our *two* platoons have been reduced to no more than 22 soldiers. For those who might be thinking that I am merely complaining in the face of "leadership challenges," I'm not. I believe that any given infantry company in any of our regular force infantry battalions faces similar problems.

Our two platoons posses the following leadership personnel: 4 Platoon has one warrant officer, two sergeants, and two master-corporals; 6 Platoon fares a little better with a lieutenant, one warrant officer, two sergeants, and a master-corporal. Any rational person must ask what we think we would accomplish by adding a further four leadership positions to a rifle company when we

can't even fill the positions we have with peacetime manning. The question I feel compelled to ask whenever we begin discussing the complete overhaul of our system because of the introduction of an improved weapons platform is what about the British and the Americans? While the LAV-III represents a significant technological step forward for us, it is relatively old hat for our two closest allies. I don't believe that the Americans or the British started creating new leadership positions when the Bradley or Warrior was introduced to their infantry forces. I know that we have consulted both the American and British forces regarding the implementation of this new weapon system, so why do we appear to be adopting a significantly different approach? Do we believe ourselves to be much more clever than them? These are two nations who have successfully used manoeuvre doctrine with similar vehicles during the Gulf War. We could do worse than use their examples as a start state.

Thus, I ask again, do we need to add a captain and three sergeants to each rifle company? While there may be some very good reasons supporting such a change, I have yet to hear a valid argument. More importantly, were we to add these positions, who would fill them? This leads to my final observation.

I firmly believe we need to rethink the manning levels of our infantry battalions in light of increased requirements. Each LAV-III will require a crew of three, who will remain with the vehicle when the remainder of the platoon dismounts. That gives a total of twelve personnel, plus the platoon commander and the 2IC, just to operate the vehicle. Taking into consideration the example of my company cited above, it is difficult to envision profitable

training taking place. I doubt that I am alone in this opinion. Most infantry platoons have around 20 to 25 soldiers all ranks. This does not provide many personnel apart from the vehicles' crews. Moreover, most battalions lose approximately 20 to 25% of their personnel at any given time due to external tasks or courses (or more, if the other units are deployed on overseas mission or training for deployment). Therefore, a rifle company of 90 soldiers can expect to be missing at least 15 to 20 soldiers of all ranks at any given time. This is not conducive to progressive training when one considers the requirements of the LAV-III.

When 2^e Battalion Royal 22^e Regiment deployed on Exercise LION INTREPIDE 98, our battalion of 776 deployed with fewer than 600 soldiers. Our rifle company had platoons averaging 22 personnel all ranks, including infantry sections of no more than six soldiers. This was during our most important exercise of the year, and we were unable to conduct much section or platoon training prior to the exercise due to summer tasks. This level of manning is unacceptable. An infantry section composed of five soldiers, including the section commander and the 2IC, will be ineffective if three soldiers must remain mounted. If an infantry battalion is expected to train for war and also provide personnel for external tasks and courses, it must have wartime manning in order to accomplish its training objectives and be a cohesive unit. If improving the cohesion of our units and sub-units is truly a priority, an infantry battalion must have the personnel necessary to function. This not only means the appropriate numbers of corporals and privates, but leadership personnel at all levels.

On paper, the regular force has nine infantry battalions. In reality, we possess the infrastructure for nine infantry battalions and the personnel for about six. When significant operations arise,

we tend to rob Peter to pay Paul by taking soldiers from one battalion to reinforce another. This is not conducive to cohesion in either unit. I seriously doubt that this comes as a revelation to anyone or that I have made a groundbreaking discovery, but it begs the question, why do we continue to do things this way?

Several new issues have arisen in the military recently, not the least among them is Quality of Life. If we are serious about improving the quality of life for all soldiers, particularly in the infantry, we should start with training, not the more highly visible incentives such as pay or military housing. I believe it was Field Marshal Rommel who maintained that the best way to ensure high morale is a high standard of training. If we are looking to maximize our "return on investment," the lion's share of money should be placed in training, not winning public praise through superficial endeavours. Easily 75% of the complaints that I hear from our troops (and even the complaints that I don't hear directly but are reported to me) originate with the lack of personnel for training not the conditions of the married quarters. If we are serious about training our army for war, we must have the personnel on the ground, who are fit and ready to train.

These then, are my conclusions regarding the advent of the LAV-III and the next millennium. The LAV-III, while it is an excellent infantry fighting vehicle providing a greater capacity to destroy the enemy (i.e., our night-fighting ability will be greatly improved, as will our ability to locate and destroy the enemy from an increased distance), it does not change the basic principles by which we fight. While a commander will have different variables to consider during the appreciation process, the *principles* remain unchanged.

There is little evidence to support the addition of a battle captain to each company and a fourth sergeant to each platoon. And, if we do add these positions, where exactly are we going to find these people?

Finally, if we are going to train, particularly with the addition of the LAV-III, we need more soldiers of all ranks in our infantry battalions.

We can address the problem of our reduced capacity to train, or we can maintain the status quo and become an army with twenty-first century equipment and a nineteenth-century capacity.

INTO THE PYRE

Major Don Banks, Headquarters Land Force Central Area

I offer this challenge to our readers...

I'd like to offer a thought in response to an idea that was proposed in a recent issue of the Bulletin. In particular, I want to offer a radical suggestion in response to the issue of reorganizing manoeuvre units along the lines of permanent battle groups. This makes eminent sense, but why not go a step further, completely outside the box? Why not form a single Combat Arms Branch, with subspecialties that provide the needed combat functions?

The advantages that I see arising from this are:

* An end to the crippling tribalism and "cap-badge-ism" that, whether we want to admit it or not, fritters away the energies and resources of a force as tiny and stressed as ours is.

* Development of a truly common approach to doctrine and training focused not on what is best for any particular arm, but on what kills the enemy most effectively.

* An increase to officer (and potentially non-commissioned member) employment by producing officers who are all trained to a common standard, to employ all combat functions equally well, with only that specialization needed to maximize their leadership and planning ability. In other words, don't try to make an officer a technician - leave that to Warrant Officers and Non-Commissioned Officer.

* The unified approach to equipment acquisition and research and development.

* The creation of units that, whatever we call them, always trains in a "combined arms" environment, since that is what they are to begin with.

I can already hear the shrieks of "heresy!", "madman!", "impossible to train!" and smell the pyre being lit. But just stop for a moment and ask "why do we have to do things the way we always have?" Why cannot close combat, direct fire and indirectly delivered fire systems and subunits all belong to one branch? If, for example, an infantry battalion already owns the means for heavy direct fire (TOW), indirect fire (mortars) and even combat engineering (pioneers), why can't we just follow that thinking and create a single branch?

This is certainly not a fully developed thesis—it is just a challenge. I await a response.

Readers are invited to offer their thoughts on this subject. If sufficient responses are received, they will be published together in a special feature. All together now...(or individually should you wish...)

Commentary, Opinion and Rebuttal

ARTICLES AND BOOKS OF INTEREST

IN THE JOURNALS: ARTICLES OF INTEREST

The following list provides readers with an overview of articles in other professional and general interest journals.

Armee d'aujourd'hui
numéro 243, Septembre 1999

"Notre Mission au Kosovo"

"La maitrise des armaments"

Armour
Volume CVIII, No. 5

"The 2nd Parachute Battalion's War in the Falklands: Light Armour Made the Difference in South Atlantic Deployment," by Captain Daniel D. Head.

Australian Defence Force Journal
No. 138, September-October 1999

"The Genocidal Events in Bosnia-Herzegovina and the International Community's Ability to Deter Future 'Ethnic Cleansing,'" by Major John Hutchinson, RA INF

"Does Present International Communication Fuel the Concept of a Global Village?" by Amber McKinnon

British Army Review
No. 122, Autumn 1999

"From Coercion Back to Consent—SFOR's Endgame," by Colonel P.G. Williams

"Force 2020," by Lieutenant-Colonel S.F. Boyd

"Close Combat, Arm's Length," by Jary and Carbuncle

Canadian Military History
Volume 8, Number 3, Summer 1999

"The Canadian Role in Operation 'Charnwood,' 8 July 1944: A Case in Tank/Infantry Doctrine and Practice," by David A. Wilson.

"The Test of Command: McNaughton and Exercise 'Spartan,' 4–12 March 1943," by John Nelson Richard.

"The Right Stuff? Evaluating the Performance of Lieutenant-Colonel F.L. Lessard in South Africa and his Failure to Receive a Senior Command Position with the CEF in 1914," by John Macfarlane.

The Canadian Military Journal

Formerly known as the Canadian Forces Journal, this new professional journal will commence publication in the Spring of 2000. Personnel wishing to submit articles should contact the Editor at: The Canadian Military Journal, The Royal Military College of Canada, PO Box 17000 Stn Forces, Kingston, ON, K7K 7B4.

International Peacekeeping
Volume 6, Number 2, Summer 1999

No new issue received

The Journal of Strategic Studies
Volume 22, Number 1, March 1999

No new issue received

Marine Corps Gazette
Volume 83, Number 10, October 1999

"Grappling with Close Combat," by Captain Clinton J. Chlebowski

"A Soldier's Load…Revisited," by Major Andrew L. Solgere

"Intelligence and Operational Manoeuvre from the Sea: Organizing for the Future," by Lieutenant-Colonel Norman C. Davis

"Soft Log and Concrete Canyons: Russian Urban Combat Logistics in Grozny," by Lieutenant-Colonel Lester W. Grau and Lieutenant-Colonel Timothy L. Thomas

Military Review
Volume LXXIX, May – June 1999

No new issue received

Military Technology
Volume XXIII, Issue 9, 1999

"All Electric Combat Vehicle (AECV) - Vision and Reality," by Hermann Grosch

"Insensitive Munitions: Background and Technology," by Peter R. Lee

Military Thought: A Russian Journal of Theory and Strategy
Volume 8 Number 3, 1999

No new issue received

Orbis: A Journal of World Affairs
Volume 43, Number 3, Summer 1999

No new issue received

BOOKS OF INTEREST: A LISTING OF RECENT PUBLICATIONS

Canadian Topics

Bercuson, David J. *Blood on the Hills: The Canadian Army in the Korean War.* Toronto: University of Toronto Press, 1999. ISBN 0-8020-0980-8.

Brode, Patrick. *Casual Slaughters and Accidental Judgements: Canadian War Crimes Prosecutions, 1944 - 1948.* Toronto: University of Toronto Press, 1997. ISBN 0-8020-4204-X.

Kingwell, Mark and Christopher Moore. *Canada: Our Century.* Toronto: Doubleday Canada, 1999. ISBN 0-385-25893-3.

Milner, Marc. *Canada's Navy: The First Century.* Toronto: University of Toronto Press, 1999. ISBN 0-8020-4281-3.

Political and Strategic Issues

Powell, Robert. *In the Shadow of Power: States and Strategies in International Politics.* Princeton: Princeton University Press, 1999. ISBN 0-691-00457-9.

Doctrine and Theory

No new titles

Ethics

Green, Leslie C. *Essays on the Modern Law of War.* Ardsley: Transnational Publishers Inc, 1998. ISBN 1-57105-069-8.

Robertson, Geoffrey. *Crimes Against Humanity: The Struggle for Global Justice.* London: The Penguin Press, 1999. ISBN 0-713-99197-6.

Ancient to Early Modern Periods

Freeeman, Charles. *The Greek Achievement: The Foundation of the Western World.* New York: Viking, 1999. ISBN 0-670-88515-0.

Kern, Paul Bently. *Ancient Siege Warfare.* Bloomington and Indianapolis: Indiana University Press, 1999. ISBN 0-253-33546-9.

Nineteenth Century Conflict

Schur, Nathan. *Napoleon in the Holy Land.* London: Greenhill Books, 1999. ISBN 1-85367-345-5.

Twentieth Century Conflict to the End of the Cold War

Alexander, Martin S. Ed. *Knowing Your Friends: Intelligence Inside Alliances and Coalitions from 1914 to the Cold War.* London: Frank Cass, 1998. ISBN 0-7146-4879-5.

Carver, Field Marshall Lord. *The National Army Museum Book of the Boer War.* London: Sidgwick & Jackson, 1999. ISBN 0-283-06333-5.

Donnelly, Thomas, et al. *Operation Just Cause: The Storming of Panama.* New York: Lexington Books, 1991. ISBN 0-669-24975-0.

Gall, Carlotta and Thomas de Waal. *Chechynya: Calamity in the Caucasus.* New York and London: New York University Press, 1998. ISBN 0-8147-2963-0

Kaufman, Burton I. *The Korean Conflict.* Westport: Greenwood Press, 1999. ISBN 0-313-29909-9.

Logevall, Fredrik. *Choosing War: The Lost Chance for Peace and the Escalation of War in Vietnam.* Berkeley: University of California Press, 1999. ISBN 0-520-21511-7

Post-Cold War

Margolis, Eric S. *War at the Top of the World: The Clash for Mastery of Asia.* Toronto: Key Porter Books, 1999. ISBN 1-55263-089-7

Future Security Environment

No new titles

Weapons and Equipment

Croll, Mike. *The History of Landmines.* Barnsley: Leo Cooper, 1998. ISBN 0-85052-628-0

Ripley, Tim. *Bayonet Battle: Bayonet Warfare in the Twentieth Century.* London: Sidgwick & Jackson, 1999. ISBN 0-283-06323-8.

United Nations and Peacekeeping

No new titles

Leadership

Crocker, H.W. III. *Robert E. Lee on Leadership: Executive Lessons in Character, Courage and Vision.* Rocklin: Prima Publishing, 1999. ISBN 0-7615-1680-8.

General

Getty, J. Arch and Oleg V. Naumov. *The Road to Terror: Stalin and the Self-Destruction of the Bolsheviks, 1932 - 1939.* New Haven and London: Yale University Press, 1999. ISBN 0-300-07772-6