THE ARMY DOCTRINE AND TRAINING BULLETIN

Canada's Professional Journal on Army Issues

Vol.5, No. 4, Winter 2002–03

ISSN 1712-9745

National Defence Défense nationale

Published Quarterly

The Army Doctrine and Training Bulletin

Canada's Professional Journal on Army Issues

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

ARTICLE GUIDELINES

Articles of any length will be considered for publication, the ideal length being 3,000 to 6,000 words. Articles can be submitted in either official language. Usage and spelling are in accordance with The Canadian Style: A Guide to Writing and Editing (Minister of Supply and Service 1997) and Le guide du rédacteur de l'administration fédérale—both are available via the Internet and at libraries or bookstores and The Concise Oxford Dictionary or Le Petit Robert. Supporting tables, charts, and images must be provided by the author and should not be embedded in the text. Articles must include endnotes. Contributors must include a brief biography citing their academic background, noteworthy military or other experience, key courses and current position. Articles can be submitted via e-mail or regular mail (a disc copy must be included). All submissions will be reviewed by an Editorial Board, and contributors will be notified by the Managing Editor on the status of their submission. The Managing Editor reserves the right to make minor editorial changes to grammar or style. Authors will be contacted should their submission require revision.

STAND-UP TABLE (COMMENTARY) GUIDELINES

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

BOOK REVIEWS

Contributions to the Book Review section should be between 1,000 and 2,500 words. Guidelines for the preparation of book reviews can be obtained from the Managing Editor. Where possible, an electronic copy of the dust jacket of the book being reviewed should be provided.

IMAGES AND GRAPHICS

Images and graphics cannot be colour or shade dependent. Graphics must be clear and simple. Electronic copies are acceptable, 300 dpi, JPEG files.

DEADLINES

Please contact the Managing Editor to confirm submission deadlines.

DISTRIBUTION AND ELECTRONIC COPIES

The Bulletin is distributed throughout the Army and to select NDHQ, Maritime Command, Air Command, and DISO addresses. Copies are also provided to defence-related organizations, allied armies, and members of the public and academia. Inquiries regarding distribution are to be made to the Managing Editor. An electronic version of the Bulletin is available at www.army.dnd.ca/ael/.

CORRESPONDENCE

All contributions and correspondence should be sent to the Managing Editor, Major John R. Grodzinski, as follows:

The Managing Editor
The Army Doctrine and Training Bulletin
Land Force Doctrine and Training System
PO Box, 17000 Stn Forces
Kingston ON K7K 7B4

Telephone: (613) 541-5010, extension 4874
Fax: (631) 541-4478
Internet e-mail: grodzinski.jr@forces.gc.ca

EDITING AND LAYOUT

The final editing, layout, and proofreading of each issue is performed or contracted by the Army Publishing Office, Land Force Doctrine and Training System, Kingston, Ontario:

English Editors: Mr. Donald E. Graves, Ms. Karen Johnstone, Lt(N) Brian Lawrie-Munro

French Editors: M. Robert Boyer, M. Gilles Langlois, Mr. Geoffrey Meyer

Format and Layout: Ms. Patricia Bridger

ISNN 1480-9826 Publication Agreement No. 1882732

Table of Contents

Part of Our Heritage

Marines!

Throughout the French and British periods of Canada's history a number of marine units served and fought in Canada and neighbouring territories.

A soldier of the Companies franche de la Marine, serving on a warship around 1750. The Companies that served on ships were formed in 1690 and were finally disbanded in November 1761. (Courtesy Parks Canada)

An officer of the Companies franches de la Marine in New France, c. 1735. The French Ministry of the Navy was also responsible for Colonial defence and raised several companies of "la Marine" to serve in Canada. These units were distinct from the shipboard companies. (Courtesy Parks Canada)

A soldier of the Royal Marines in 1814. Members of this corps served in Canada in 1758-59 and two battalions served in Lower and Upper Canada during 1813 and 1814. Their members included two companies of Royal Marine Artillery and a Congreve Rocket Detachment. (Courtesy Anne S.K. Brown Military Collection, Brown University, Providence)

A drummer, private and sergeant of the Royal Marines, Canada, 1838. A detachment of Royal Marines fought alongside British and Canadian forces at the Battle of the Windmill, near Prescott, Ontario, during the 1838 Rebellion. (Courtesy Donald E. Graves)

Tactical Aviation Update

A Regular Feature Provided by 1 Wing

The intent of this article is to provide an update on Canadian Forces tactical aviation doctrine, training, and concept issues that have taken place over the past year. Much has been achieved during this timeframe, which has moved tactical aviation's capability closer to Commander 1 Wing's goals. These goals were articulated in his Canadian Tactical Aviation Vision Statement.[1]

The most significant ongoing project, which will affect tactical aviation's ability to more effectively support the Army, is the acquisition of the Electro-optical, Reconnaissance, Surveillance and Target Acquisition (ERSTA) mission kit. This project started as a concept paper in 1996, written by the incumbent 1 Wing Doctrine officer, who had served as an Armed Lynx exchange pilot with a British Army Aviation Corps (AAC) unit during the Gulf War. It was the application of his armed reconnaissance (recce) helicopter experience that allowed him to foresee the possibility of using the Griffon helicopter as a multi-role platform, capable of conducting reconnaissance, when fitted with a modern electro-optical mission kit. ERSTA is intended to give the Griffon helicopter the ability to standoff a safe distance, identify targets from a 9 km range, and designate targets for precision guided munitions (PGMs) by means of a laser target designator.

In February 2002 the ERSTA Request For Proposal (RFP) was released to Bell Helicopter Textron Canada Limited (BHTCL). As part of the bid proposal process, BHTCL is competing for the sub-contract for the ERSTA Airborne Sub-System (ABSS). Bid submissions from interested vendors for the ERSTA ABSS are due at BHTCL in September. Following submission, BHTCL will evaluate bids and select a winner. The winning ABSS bid will then be integrated with the BHTCL proposal to the ERSTA RFP. The milestone **estimates** for the ERSTA procurement are as follows:

- BHTCL proposal to RFP November 2002;
- Contract Spring 2003;
- Prototype-test and evaluation Spring/Summer 2004;
- Delivery commencing Fall 2004/Spring 2005.

Commensurate with the estimates on the schedule, training for ERSTA mission specialists should commence at 403 Squadron, Canadian Forces Base (CFB) Gagetown, in the spring of 2005. The priority for the first mission specialists trained will be for those assigned to 427 Squadron who are scheduled to deploy to Bosnia in September 2005. Based on these timelines, 1 Wing Headquarters has stated that the initial operational capability (IOC) for an operationally trained, deployable ERSTA flight will be September 2005.

The most significant ongoing project...is the acquisition of the Electro-optical, Reconnaissance, Surveillance and Target Acquisition mission kit

The specifications for the ERSTA requirements are based on current long range imaging cameras that have third generation forward looking infra-red (FLIR) technology, combined with laser rangefinder and designator capabilities, and are interfaced with aircraft systems to function as an integrated mission kit. The performance characteristics of the ERSTA will enable the Griffon (CH146) to conduct reconnaissance, surveillance, and direction and control of fire tasks in support of land operations across the full spectrum of operations. ERSTA, when combined with the electro-optical (EO) sensors inherent to the Coyote recce vehicle and the proposed acquisition of unmanned aerial vehicles (UAVs), should provide a state of the art data and information gathering team, that will function as complementary systems within the intelligence, surveillance, target acquisition and reconnaissance (ISTAR) architecture. The Canadian army, which has already received praise for the sensor capabilities of the Coyote, may very well become a world leader in the recce and surveillance role with the addition of ERSTA as part of the combined arms team.

With the phase out of the Kiowa helicopter fleet in 1996, tactical aviation began to lose its helicopter recce expertise. No aircrew recce training was conducted at all from 1995, until the deployment of eight Griffons to Kosovo in 1999, and even that recce training was only a very brief introduction. With ERSTA coming on line in 2005, it was decided to commence basic aircrew recce training at 403 Squadron in March 2002. Currently all 1 Wing Griffon pilots are being taught basic recce procedures as part of their Griffon Tactical First Officer (TFO) course. While ERSTA will provide the sensors necessary for increased standoff distances, the basic recce procedures for helicopter movements within a recce section should not change dramatically.

This was proven through experimentation in 2001.

Army Experiment 7A (AE7A) was conducted at the Army Experimentation Centre (AEC), of the Land Force Doctrine and Training System (LFDTS), with the aim of determining the number of ERSTA mission kits required within a recce section. In order to prepare for this experiment, recce tactics, techniques and procedures (TTPs) had to be re-introduced through renewed aviation doctrine and TTP publications. Utilizing former procedures used on the Kiowa and current procedures used by United States (US) Army Aviation, these renewed procedures were used throughout the simulation. While the primary aim was to verify the number of mission kits required, a secondary aim of verifying helicopter recce doctrine and TTPs was also achieved. Utilizing ModSAF, a section of two simulated Griffon helicopters, equipped with simulated ERSTAs, provided recce support to a simulated five car (Coyote) armoured recce troop. With several qualified recce pilots participating, the experiment provided insights into the possibility of successfully using "sneak and peak," Nap of the Earth (NOE) recce techniques with the Griffon. The conclusion from the participants and the operational research (OR) staff was that the resurrected recce techniques were still sound and resulted in mission accomplishment within the simulated experiment architecture.

During the ERSTA simulation, it was possible to detect targets at 20 km, recognize them at 18 km and identify them at 9 km. The ERSTA also provided the capability of giving exact grid locations by means of the laser range finder, which will be linked to the onboard global positioning system (GPS), as well as being able to designate targets for PGMs through the laser target designator. While the automatic tracking system tracked these targets, they could only be engaged (during this experiment) through indirect artillery fire. Although this proved successful, it was also time consuming. It became obvious that a more effective means of engaging numerous targets, over a short period of time, would be through the use of onboard PGMs. This is not a new idea. Most coalition army aviation organizations that use helicopters for reconnaissance have already armed them with missiles, both for self-protection and for offensive purposes. These helicopters include the Kiowa Warrior, the armed Lynx, and the Apache. The natural follow-on for a Griffon recce helicopter is an armed variant.

The Army, which has already received praise for the sensor capabilities of the Coyote, may very well become a world leader in the recce and surveillance role with the addition of ERSTA as part of the combined arms team.

An armed Griffon would finally satisfy tactical aviation's doctrinal role of aerial firepower, reconnaissance and mobility. These aspects of aviation's role have been confirmed and articulated by the Chief of the Land Staff (CLS) over the past two years. It was only natural that 1 Wing should take the lead in developing the armed Griffon concept as one option to achieve a tactical aviation aerial firepower capability. The Armed Griffon Concept Paper, published in September 2002, provides as much information as possible on the options available for arming the Griffon. This will permit both land and air staffs at all levels to further explore the possibilities of arming the Griffon. One of the recommendations of the concept paper is to experiment with the three proposed armed Griffon models.

Experimentation with an armed Griffon model already took place during Director of Land Strategic Concepts' (DLSC) Experimental Force (EXFOR) experiments. A UTTH squadron consisting of two armed recce Griffon flights and one utility flight provided support to a future brigade. The aerial firepower provided by the armed Griffons was a significant contributor to the success of the brigade in all phases of the battle. The other experiment involving Griffons in 2001-2002 was *Bronze Zizka*, which was conducted by Director General Operations Research (DGOR). A tactical helicopter squadron consisting of two ERSTA Recce flights and one utility flight provided support to the Main Contingency Force (MCF) brigade group. Very early in the experiment, the opposition forces (OPFOR) determined that primarily Coyote and Griffon ERSTA assets were detecting them. This demonstrated significant increases in data and information collection that was made possible through the employment of these new complementary recce platforms within the ISTAR architecture.

1 Wing, the tactical aviation centre of expertise, continues to look forward by developing better ways to support the Army through the acquisition of new equipment and capabilities. Since acquiring the CH146 in 1995, the Griffon has acquired the Missile Approach Warning System (MAWS), the Counter-Measures Dispensing System (CMDS), the Infrared Suppression System (IRSS), and the Radar Laser Warning Receiver (RLWR). The acquisition of this equipment was driven by the operational requirements demanded of the Griffon helicopters, which were deployed to support Operations KINETIC (Kosovo) and PALLADIUM (Bosnia). The Griffon is now able to operate more tactically and is more able to survive air defence (AD) threats and thus provide better support to operations.

ENDNOTE

1. 1 Wing HQ 3185-1 (Comd) 11 December 2000

Canadian Land Force Command and Staff College

Conduct of the Army Operations Course—Winter 2003 Update

The purpose of this article is to provide a brief update on the status of the Army Operations Course (AOC) since the first situation report (sitrep) was published in the Fall 2002 edition of the Army Doctrine and Training Bulletin (Volume 5, Number 3).

In recent months a certain level of clarity has been achieved in the relationship between the structure of the AOC and the training requirements of Development Period Two, which is best illustrated in the following chart

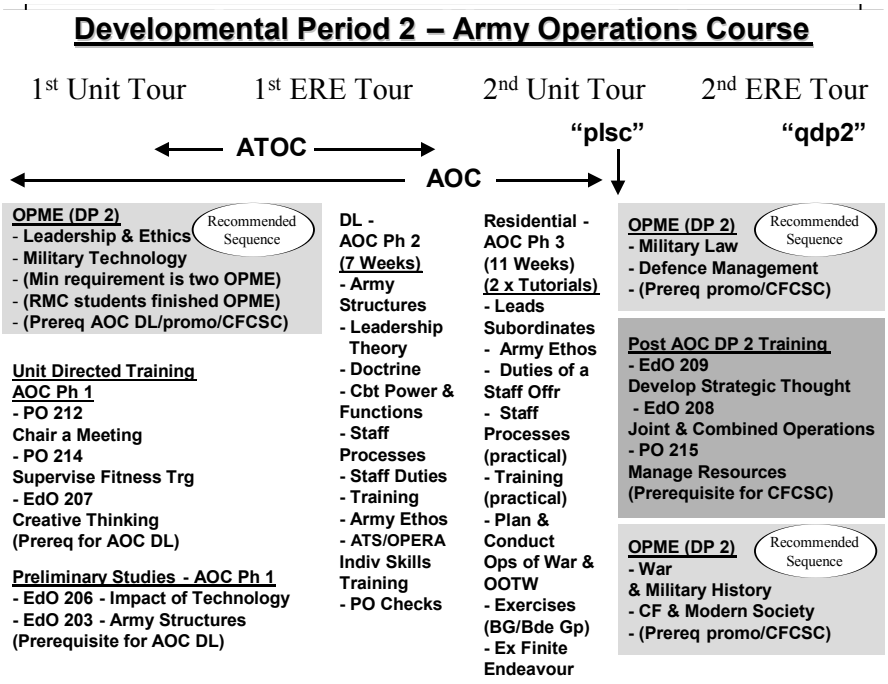


Figure 1—Key:

ATOC—Army Tactics and Operations Course. Conducted by the Tactics School, Combat Training Centre.

"**plsc**"—Pass Land Staff Course.

OPME—Officer Professional Military Education. Conducted by The Royal Military College of Canada.

"**qdp2**"—Qualified Development Period Two.

CFCSC—Canadian Forces Command and Staff Course. Conducted by Canadian Forces College, Toronto.

DL—Distributed Learning.

OOTW—Operations Other Than War.

ERE—Extra Regimentally Employed.

Within the content of the chart readers will note that most officers will enter into the AOC programme upon arrival at their units and should complete the programme by the end of their second Regimental tour. The course is divided into the following three phases: phase one–unit directed training and preliminary studies (self-study); phase two–distributed learning (seven weeks from garrison location); and phase three–residential training at the CLFCSC (11 weeks). The chart also recommends the sequence by which officers negotiate the OPME programme, understanding that completion of all six OPME exams is a prerequisite for both promotion and enrolment on the CFCSC. Furthermore, it should be noted that completion of the two OPME exams, "Leadership & Ethics" as well as "Military Technology", is a prerequisite for entry into Phase Two of the AOC. Finally, once officers have completed the AOC they must still negotiate three education/performance objectives designed to prepare officers for the CFCSC (see the box titled—Post AOC DP 2 Training).

For full details of the AOC, including details regarding candidate registration procedures, see the CLFCSC web site at: http://armyapp.dnd.ca/olc-cad/.

The Administrative Estimate in the Operation Planning Process

A Tool Not Well Understood

by Lieutenant-Colonel R. Préfontaine, CD

INTRODUCTION

Having been a DS at the Canadian Land Forces Command and Staff College for the last couple of years, I have come to the conclusion that the development of the **Sustainment** component of the plan development process did not seem to be well understood. At some point in the professional development of our officers, we neglected this crucial aspect of the operations. The purpose of the **Operation Planning Process (OPP)** is to generate a plan that takes into account the combat functions and synchronizes the tasks that have to be carried out. In order to better develop the **Sustainment** component of this process, officers must have an understanding of the **administrative estimate** process and must understand where it fits into the OPP. One must also realize that **administrative estimates** are not the exclusive purview of the Combat Service Support (CSS) officers, but the responsibility of all officers responsible for the administrative support of their unit.

The integration of the artillery, engineers, signals, G2, and G3 estimates and of the **administrative estimates** into the OPP is at the core of plan development, whether the plan is strategic, operational or tactical. By taking into consideration the Commander's intent, the concepts of operations that have been developed and the results that are expected, the careful planner is able to foresee the combat support tasks required and to synchronize the units and sub-units for the execution of those tasks. This task analysis is not only effective in the conduct of war time operations, it is also of great use in the execution of peace time operations, such as contingent deployments, domestic operations and training. **Estimates form the cornerstone of plans and annexes to the orders that are produced**.

AIM

The aim of this paper is to describe, as simply as possible, the OPP and the integration of the **administrative estimate** into that process. With this aim in mind, we will examine each step of the OPP and its outcome. We will then describe the **administrative estimate** and will endeavour to show where it fits into the planning process. By the time the reader reaches the end, he or she should have a fairly good understanding of the OPP and of how **administrative estimates** and staff checks fit into the process.

THE OPERATION PLANNING PROCESS

One must first understand that the OPP is a planning process that is constantly evolving. From the original eight steps, it is now down to six in Canada and moving towards four in the USA. However, it is not the number of steps that is important, but the understanding of the development of each step leading to the plan. The reader must also know that this process is used by just about every army in the world, and that familiarity with the process will result in greater effectiveness in the performance of staff duties within NATO or the United Nations.

Mission Analysis: the **facts**, the **hypotheses**, the **analysis of the situation**, which all translate into an analysis of our area of operations, our area of interest, the enemy, friendly forces, and the necessary support. They provide the point of departure for the **staff estimates**. The **estimates** lead to conclusions based on the analysis of the data and facts available in each situation. **Staff estimates** are the foundations upon which the **courses of action** will be **developed**. Failure to make an **estimate** could result in errors and/or omissions when **courses of action** have to be developed, analyzed and compared.

The OPP is equivalent to the **tactical estimate** done at the battle group level and is simply the tactical estimate made at the formation level. The aim is the same: to carry out a **mission analysis**, **determine what tasks** have to be carried out, **decide where and when** those tasks must be carried out, and **synchronize** the execution of those tasks. The OPP is the process whereby the Commander, assisted by his staff, will arrive at a plan. While each commander, or his senior staff officer who will direct the development of the OPP, may have a very personal understanding of the OPP, the aim remains the same. This is why the process must be thoroughly understood and not simply learnt by rote.

Before explaining where the **administrative estimate** fits into the OPP, let us quickly perform a short analysis of this process.

- **Step 1. Receipt of Tasks**. This step clarifies the intents and concepts of operations of the higher levels. It should provide

Lieutenant-Colonel R. Préfontaine, CD

a list of the **assigned tasks** that the higher level expects you to carry out. These tasks may be the result of their mission analysis in the case of war operations, of the mandate given to an intervention force in the case of a United Nations deployment, or of a tasking assigned by a government or police force in the case of a domestic operation. An **assigned task** is, therefore, a task that must be executed to realize the higher Commander's concept of operations. This task will include a subset of other tasks that will have to be carried out by other units and synchronized. The **assigned tasks** must appear in the synchronization matrix (product of the war games, the origin of which I shall explain later in this paper).

- **Step 2 . Mission Analysis**. This step is performed by the commander alone or with the assistance of his key staff officers. At this time, the commander analyzes his mission, the enemy situation, the terrain, and possible courses of action and determines the **implicit tasks**. The **implicit tasks** are those tasks that the commander will identify as crucial to the success of the mission. A task is said to be implicit when it requires special attention in time and space because it is so vital to the success of the mission. As a rule, only those tasks that will require an allocation of resources, groupings and synchronization should be considered. **Implicit tasks** are then tagged on to the **assigned tasks** in the **synchronization matrix**. Day-to-day replenishment, which is carried out according to normal procedures, is not an **implicit task**. However, replenishment that must be planned as part of a movement or at a critical moment in the battle can become an **implicit task** that will have to be planned in detail.

At this step, the Commander also determines what **critical information** he needs to execute his mission. In war operations, most of this information will flow from the G2's Intelligence Preparation of the Battlefield (IPB). However, some information may be needed from the G4, the G3 and other Arms. In operations such as a UN deployment, **critical information** could cover such issues as the forces in situ, the climate, the population, sustainment capability, etc. In the case of a domestic operation, the same elements may have to be considered. What needs to be remembered here is that: this **critical information** will guide the staff work in the development of **courses of action**.

Staff work will be oriented by the Commander's **planning guidance** and by the G3/COS's **planning directive**, describing the commander's mission analysis.

- **Step 3. Development of Courses of Action**. As this heading makes clear, the staff begins to identify, in this step, options for **courses of action**. **Courses of action** options are examined and developed to form a concept of operations. A concept of operations is comprised of an **intent**, an **explanation of the manner in which the operation will be executed**, the **main effort**, and the results to be achieved. At least three potential courses of action should be identified and developed. Each Support Arm and Services staff will develop a plan to support each of the options, at this time. Those support plans will be developed based on their own estimates and staff checks. However, they are not developed in isolation. The staff must constantly share information.

After the **information briefing**, when the G3 or COS has identified the points of interests or changes to the plan, the courses of action are compared in the **courses of action war game**. The purpose of the war game is to confirm the organization of **assigned and implicit tasks** in time and space, to make sure that there are no other **implicit tasks** that have to be performed, to identify groupings and to ascertain whether each of the courses of action can be supported.

From each course of action developed, three draft staff products will come out of this war game: a draft of the **Decision Support Template (DST)**, which will represent particular areas of interests or events in time where decisions will have to be taken, a draft of the **Synchronization Matrix**, which will represent **friendly activities** that will have to be synchronized in time and space for each of the combat functions, and, finally, a draft of the **Attack Guidance Matrix (AGM)** that will be used by the supporting arms staff.

Note: It is left to the discretion of the staff who will be developing the plan, as to what tasks are to be listed in the synchronization matrix. Personally, and for the remainder of this analysis, I prefer using the assigned and implicit tasks, as this is relevant to the staff work on activities that have been deemed crucial to the realization of the mission.

- **Step 4. Decision**. The courses of action, expressed in concepts of operations in time and space, are then presented to the commander at the **decision briefing**. The commander then decides on the course of action to execute, as presented, or he may elect to make modifications to it.
- **Step 5. Plan Development**. This course of action, together with its drafts of the **DST, synchronization matrix** and **AGM**, will be refined through the **plan war game**. At this step, the tasks that have to be carried out by the manoeuvre units will be specified and the tasks to the other combat functions in time and space will be confirmed. If time is short, the focus must be on those points deemed critical by the Commander. At the same time, the three products of the war game will be completed. The aim, at this step, is to arrive at a well detailed course of action with most of the tasks clearly identified.

From the products of the war game, estimates and staff checks and from the coordination, the plans are completed.

- **Step 6. Plan Review**. The operation, administrative and supporting arms plans are drafted and integrated, based on the results from Step 5. The tasks identified in the synchronization matrix, should be used to write the orders.

This description is only a very short summary of the key activities and products of each of the steps of the OPP. I encourage the readers to read B-GL-300-003/FP-001, Command, which explains the process in detail.

ADMINISTRATIVE ESTIMATE

The **administrative estimate** is the impetus that leads to the administrative order and the synchronization of administrative tasks. Sometimes, the term **logistical estimate** is used. This new term, however, does not reflect the fact that even the OC of the administration company of the manoeuvre unit must carry out a similar analysis on a different scale. This critical element in the development of the plan can only be developed once the operational tasks have been determined. In the case of a purely logistical operation, such as a dumping program or temporary depot, or the deployment of a contingent overseas, an **administrative estimate** will make it possible to organize in time the support tasks required for such operations.

Several formats can be used to develop the **administrative estimate**, provided that the aim is achieved, namely to ensure that all administrative tasks have been identified and that the combat support resources are used effectively and as required. B-GL-331-002/FP-000, Staff Duties in the Field, provides an example of an administrative estimate. Another estimate format is given in this paper at Annex B. An estimate template is provided at Annex C. It takes into account the steps of the process and where they fit into the OPP described at Annex B.

THE DEVELOPMENT OF THE ADMINISTRATIVE ESTIMATE

In order to better understand how the process fits into the OPP, we will go over each of the steps of the OPP and will describe the activities related to the development of the administrative estimate.

- **Step 1. Receipt of Tasks**. This is the step where the **assigned tasks** were identified. The execution of those tasks is mandatory. As soon as those tasks are received, the unit or formation administrative staff must begin to identify the administrative tasks related to each of those tasks. Each of the assigned tasks should be taken individually through the process described at Annex B.

At this step, the concept of operations has yet to be developed. A list of the **administrative tasks** must be drawn up for each of the **assigned tasks**. The staff checks can now begin. These will be used to identify the number of aircraft or trucks required; the estimate of human and equipment losses; the quantity of combat materiel that will be expended; etc. Several methods can be used to carry out these checks. The **OPERA program** (Electronic Battle Box) contains staff checklists that will help carry out some of those **staff checks**. However, it must be borne in mind that these are only staff checks that will be useful in quantifying some of the **administrative tasks**. **These staff checks are not the administrative estimate**. They are but a tool to help us to quantify resources for tasks that the **administrative estimate** will have identified.

- **Step 2. Mission Analysis**. The **implicit tasks** identified during this step must be given the same attention that was given to the **assigned tasks**. Because these implicit tasks have been deemed crucial to the success of the mission, they must be analyzed individually and the administrative tasks must be linked to each implicit task that was identified.

As with the **assigned tasks**, once the analysis is done and the staff checks made, administrative tasks only need to be arranged chronologically in their order of execution. This synchronization in time will depend on the concepts of operations that will be developed in the next step.

- **Step 3. Development of Courses of Action**. In this step, the administrative staffs must, together with their operational staffs, monitor closely the courses of action that are being developed. Thus, in the development of the courses of action, the **assigned** and **implicit tasks** will progressively be placed in a chronological order of execution, and this will have an impact on the synchronization of the **administrative tasks**. In the same way, the areas where the **assigned** and **implicit tasks (concept of operations)** will be executed, based on the G2's IPB, will have an impact on the administrative units' capability to support the plans. Therefore, for each **course of action** presented at the **information briefing**, an administrative plan will have to be prepared and presented. These plans should have been discussed with the administrative units/formation to assess their feasibility. Concurrently, the staff will have to state whether each plan can be supported. If a plan cannot be supported, it is the responsibility of the staff to propose changes that could permit the realisation of this specific plan. The plan will be eliminated only if no solution can be found or the risks are assess to high. A plan that cannot be supported should be discarded.

The next action in this step is to confirm the tasks, groupings, and time and space of each course of action in the **courses of action war game**. In this step, the administrative staff also confirms the execution of the **administrative tasks** related to each of the operational tasks, in time and space.

Lieutenant-Colonel R. Préfontaine, CD

In principle, each course of action, at the end of the war game, will be split into phases. Consequently, **administrative tasks** will be placed in the same phases as the operational tasks. Administrative phases are not to be created independently of the operation phases within the same operation, as this could lead to confusion.

At the end of the war game, the administrative staff must confirm the possible courses of action with the administrative units and begin the synchronization of some of the functions, where possible, to begin the battle procedure. This consultation also allows the planners to confirm that the administrative units can continue to support the plans if changes were introduced.

- **Step 4. Decision**. During the **decision briefing** to the Commander, the administrative staff representative will only present the **extraordinary measures** that have to be taken and that are outside the normal routine. This approach provides the Commander with an idea of the complexity or the required synchronization of a given plan. The representative should also provide an estimate of the losses in personnel and equipment that the units and formations can expect.

The **decision brief** is followed by the **plan war game**. The administrative staff representative who will be taking part in the plan war game must have in his possession the list of **administrative tasks** that must be carried out for each **operational task (assigned and implicit)** in the course of the war game. The purpose of the war game is to confirm the **administrative tasks** in **time and space** and to confirm whether other tasks need to be added on.

- **Step 5. Plan Development**. From the list of identified tasks and **time and space** factors, the administrative staff will confirm the final details with the administrative units/formations in order to develop the final details.
- **Step 6. Plan Review**. With the **concept of operations** and the **synchronization matrix**, which synchronizes the combat function for each of the assigned tasks and implicit tasks and the **administrative tasks** that were deduced and confirmed during the war games, planners have all the information they need to prepare the **Administrative Order**.

Who must prepare the administrative estimate? At unit level, the OC of the administration coy is responsible to ensure that the process is completed. He may be assisted by his specialist officers. At the brigade level, the G4 Plans, assisted by the rest of the staff from the G1 and G4 is responsible. His implications with the G3 Plans, the G2 and Arms advisors, make him the most current officer on the future operations. He must also inform the units on the courses of actions that are being developed in order to confirm their capacity to support the plans being developed.

CONCLUSION

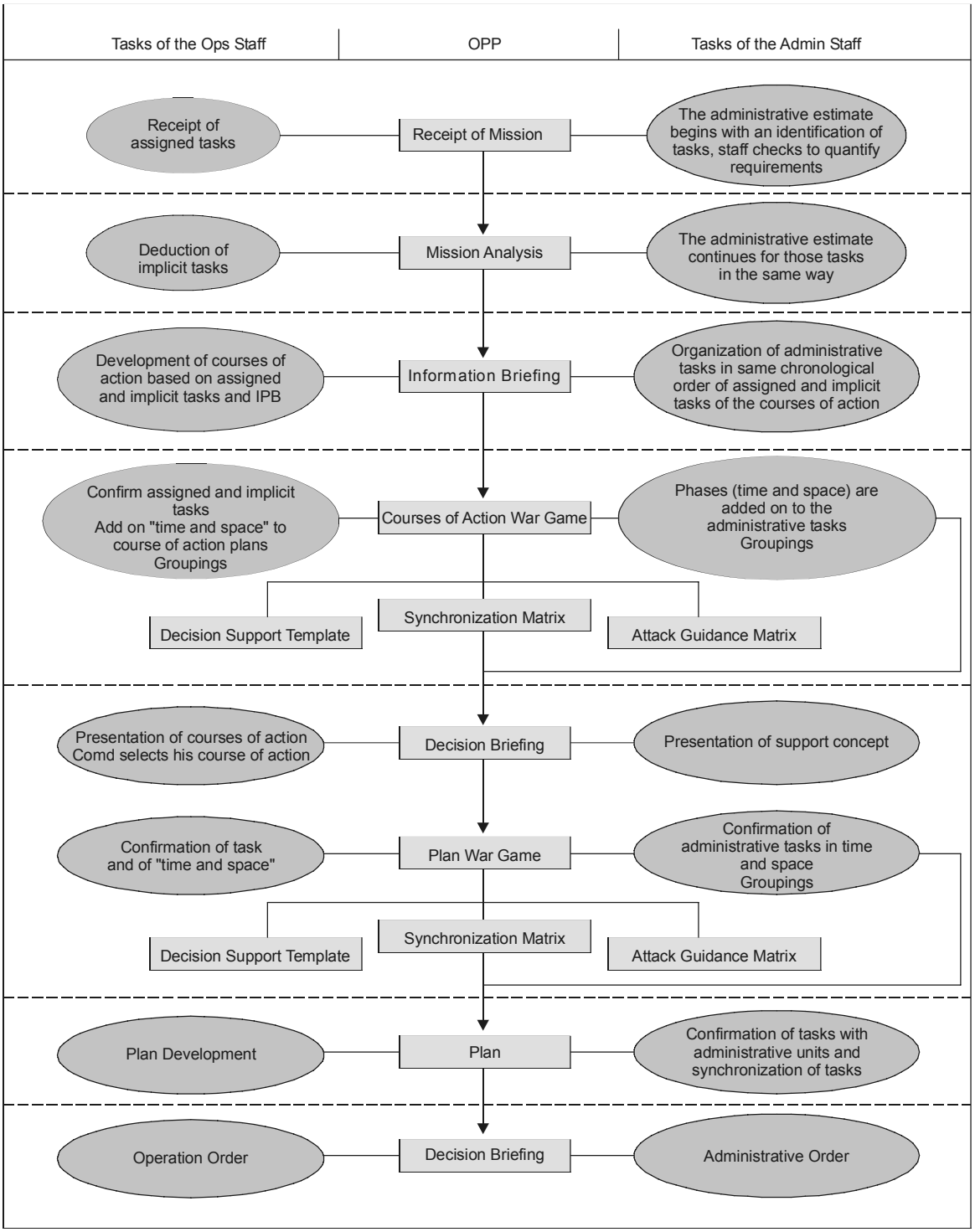
The **Administrative Order** describes the **concept of support** and goes over each of the **administrative tasks** that will have to be carried out. It identifies the **units** that will be carrying them out and synchronizes them in **time and space**.

- **Annex A** to this document shows in graphical form how the **administrative estimate** fits into the **OPP** and how this estimate generates, in the end, an **Administrative Order**.
- **Annex B** describes one way of making an **administrative estimate**, based on the OPP.
- **Annex C** suggests an estimate template. It is recommended to read Annex B before Annex C in order to make sense of it.

The **administrative staff** must analyze the capability to support each courses of action developed. They must determine the critical requirements for each of the administrative factors, by identifying potential problems and deficiencies. They must evaluate the status of each of the administrative factors and match them with the resources available. They must identify the shortfalls in resources and recommend action for minimizing their impact. In short, improvisation may allow some problem to be solved, but only an accurate prediction, made from a detailed estimate, can ensure the continuous **sustainment** of a **Force**.

Annex A
Sequence of Events

Preparation of an Administrative Order



Lieutenant-Colonel R. Préfontaine, CD

Annex B

The Administrative Estimate

The **administrative estimate** is made to ensure that available combat support resources are used as effectively as possible and that all risks have been suitably assessed. The **administrative estimate** must take into account various tactical and **administrative factors**, the commander's concept of operations, and the resources available. The **administrative estimate**, through the various phases of the OPP, will result in a list of administrative tasks that will then have to be coordinated with the various administrative units, after which they will be drafted into an administrative order.

In the course of making the estimate, requirements will be quantified through **staff checks**. Those **staff checks** will then allow a match to be made between requirements as stated and the available resources. In this manner, administrative tasks can be organized for each phase of the operation and any additional requirements in resources or impracticalities with regard to providing support for the plan can be identified early on in the process.

administrative estimates are not the exclusive purview of the Combat Service Support officers, but the responsibility of all officers responsible for administrative support

The estimate must be comprehensible and on-going. It must provide insight into forthcoming activities. It must show what is quantifiable and what is probable. It is a continuous, not a cyclical process. Based on a continuous stream of incoming information or on confirmation of information, the estimate must maintain its analysis and provide a mental picture of activities to come. It is the link between current and future operations.

But what is there to analyze? Personally, I recommend analyzing the **assigned and implicit tasks**, because those tasks have been identified as critical to the success of the operation. Consequently, the administrative staff must carefully analyze each one. Having become familiar with the process, the staff will be able to identify more easily those tasks that are worthy of such analysis. Therefore, for the remainder of this annex, I will assume that the higher commander has given our formation two assigned tasks, which I will call A1 and A2. The mission analysis of our commander has revealed three implicit tasks, which I will call I1, I2 and I3.

MISSION

It is the mission deducted by the commander from his mission analysis that is entered here. The whole administrative estimate is to be made based on this mission.

FACTORS	CONSIDERATIONS	DEDUCTIONS
Enemy	- Disposition - Strength - Loc - Capability - Intent - NBC threat - Air threat	- Eval of en pers cas (staff checks)—POW reqrs (tn, cages, cas) (staff checks) - Impact on CSS ops - Eval of battle intensity (staff checks) - Eval of mat losses (staff checks) - Eval of secur in rear area (tactical estimate) - NBC decon reqrs (staff checks)Camouflage/Concealment
Friendly Forces	- Admin pri based on higher intent of higher comd - Higher comd CSS resources aval - Higher CSS forms/elms to provide sp (replenishment points, eqpt collecting points, med facilities, etc) - Concept of op and end-state - Operational phases of the op - Attachments and detachments - Battle groups - Current stocking level - Host Nation standing agreements	- Pers and eqpt replacement pri - Reconstitution reqrs - CSS effort pri - Possible areas of deployment of admin units - Possible grouping of CSS elms - Possible sp concept - What are the phases of the battle?

FACTORS	CONSIDERATIONS	DEDUCTIONS
Terrain	- Eval of main and secondary roads (recce,reports etc.) - Eval of obstacles (waterways, steep slopes,etc) (recce, reports, etc.) - Eval of distances (staff checks) - Eval of inhabited sites (recce, reports, etc) - Eval of defiles (recce, reports, etc) - X-country capabilities (recce, reports, etc) - Eval of local population (reports, etc) - Make-up of terrain	- Selection of main supply rte (MSR), evac rtes, refugee rtes - Traffic con points, if any - Convoy escort reqrs - Defile protection, if needed - Replenishment method - Possible loc of CSS units - Possible loc of CSS elms (commodity points, main supply point, forward surgical facilities, ECPs etc) - Loc of the force, brigade or division sp zone - Reqrs for a forward logistics group-Reqrs to liaise with local population - Reqrs for repair due to nature of the terrain - Need for a refugee plan?
Weather	- Season - Temperature - Precipitation - Length of daylight vs night - Effects on NBC use	- Road limitations - Speed limitations - Additional or fewer recovery tasks - Reqrs to prepare vehicle for ambient temperature conditions - Shelter reqrs - Impact on aviation - ncrease in water consumption-Increase in water conservation - Temperature-related health problems - Requirement for special fuel, ammo, general stores
Time and Space	- Phases of the op - Dist between CSS units and higher CSS elms supporting us - Dist between CSS units and the units being supported - Dist between assembly area and line of departure or holding area	- Reqrs for exchange points between CSS units and higher CSS elms - Reqrs to establish temporary depots - Reqrs to establish eqpt collecting points or assembly areas-Reqrs for ambulance stations or forward surgical facilities or other evac points - Evac of POWs
Security	- Considerations for the commander's deception plan, cover, rear area defence plan, replenishment load protection - Rear area Security (RAS)	- Minimize CSS ops in some sectors - Increase CSS ops in other sectors - Reqrs for special replenishment methods - Protection of the maintenance loads - Plan for RAS

SITUATION

The following factors are **general factors** that the staff must necessarily take into consideration, and which will have an impact on the administrative situation generally. Those factors describe the **area of operation** and **enemy and friendly activities**. To these are added all the **assumptions** required to complete the estimate. These will be confirmed as the operation progresses.

Those general factors help to describe the general context in which CSS units must operate.

ANALYSIS

The following factors are **administrative factors** that should be closely analyzed with respect to each of the **courses of action** that will have to be developed. Those courses of action contain a series of **friendly actions (assigned and implicit tasks)** that are found in the **synchronization matrix**. Those are actions that will have to be synchronized in time and space through the six (6) combat functions in order to realize the concept of operation. In order to make sure that nothing is left out in the planning process, I suggest, at the minimum, the **assigned and implicit tasks** as friendly actions in the **synchronization matrix**. Other tasks identified during the war games can be added on later. Therefore, if we return to paragraph 4 of this annex, I had identified two assigned tasks, namely A1 and A2 and three implicit tasks, ie, I1, I2 and I3. Each one of those tasks should be evaluated against the **administrative factors**.

Lieutenant-Colonel R. Préfontaine, CD

Every **administrative factor** should be analyzed in light of the requirements, priorities and limitations. From the analysis of those factors, certain deductions can be made that will be used to develop the support concept. Let us define those terms:

FACTOR	REQUIREMENTS	PRIORITIES	AVAILABILITY	LIMITATIONS	DEDUCTIONS
Transport	- Calculate the number of vehs required for dumping programs or other tasks - Mail and Postal	- Imposed by op (roads, time, main effort, priority of supplies for dumping)	- List all aval resources, ie, trucks, aircraft, local resources or otherwise	- As imposed by ops	- Will depend on supply factor - Reqrs in higher level resources - Reqrs to move by day - Reqrs in special purpose eqpt - Special prep of vehs or pers - Distribution of mail and postal services
Supply	- Rate of consumption based on intensity of ops: - ammo - arty - mines - POL - def stores - eng stores - spare parts - gen & tech stores - rations - water - Decontamination mat - Waste and Disposal - Mat and svcs procurement directives	- Determine with ops pers, what stores have pri - Control of ops stocks	- List of what is aval	- As imposed by ops - Operational reserves - Qty of ammo per gun - Qty of def stores to deliver - Limitations of mat sent forward - Level of Ops stocks	- Qty of mat to move - Mat that could fall short - Ident of decontamination loc - Mat and svcs procurement policy
Maintenance	- Estimate of losses in eqpt due to cbt and non - cbt (staff checks) - Reqrs in recovery resources (defiles, bridges, obstacles, bring mat backwards)	- Ident repair and recover pri based on operational pri and CSS capabilities	- List all aval resources (MRTs, tow trucks, local assets, etc.)	- Consider imposed limitations, cannibalization policy, etc established by ops	- Alloc of resources - Ident of high level reqrs - Recovery plan - Repair limitations for ea level - Special needs
Medical	- Staff check of pers cas for ea phase of the battle (check done for both en and friendly forces) - Special reqrs due to temperature, weather, otherwise	- Evac pri - Access to treatment stns en rte - Air evac pri	- List of all medical resources for evac and treatment	- Evac rtes - Capability to deploy treatment stns along the evac rte	- Evac chain for air evacs, is there more ambs needed? - Locs for amb and treatment stns - Reqrs in forward treatment stns - Retention capability - Timely opening of med stns - Local assistance
Military Police	- Control post required - Estimate of number of POWs - Estimate of number of refugees - Reqrs in discipline - Estimate of stragglers - Reqrs in law enforcement	- According to operational plan	- List of all aval resources	- According to operational plan	- POW escort plan for transport, guarding and administration of prisoner cages - Loc of prisoner cages - Refugee control reqrs - Reqrs in traffic control posts - Recce tasks - NBC surveillance
Personnel	- Reqrs in replacements based on cas estimates - Burial directives - Administration of justice-R&R policy - Special pay - Orders and decorations - Translators / interprets - Local contracts - Other services	- Replacement pri for pers and crew with vehs according to the Commander's pri - Management priority of cases requiring the administration of justice according to commander - Other services	- Aval of resources - Planning of replacement reqrs with higher formations and units	- Depending on sit	- Indiv and crew replacement plan - Burial and cas evac plan - Administration of justice policy - R & R policy - Special pay policy - Orders and decorations policies - Policies for employment of foreigners employees

- **Requirements**: list of equipment, units, facilities, stores, etc that are required. They are represented by platoons, troops, number of vehicles, hospital beds, aircraft, etc.
    - **Priorities**: based on the commander's priorities, that is to say, his main effort. What materiel is needed on a priority basis?
    - **Availability**: what are the resources available. This will be required to marry tasks and resources; and
    - **Limitations**: list of the known limitations.

    The analysis, the next step of the administrative estimate process, can be illustrated as follows:

- **Analyzed tasks**: A1 (the same analysis will be used for each of the assigned and implicit tasks.)

The deductions made from the general and the administrative factors allow you to determine, for each phase, given that you have analyzed each of the assigned and implicit tasks, all the **administrative tasks** that have to be carried out. Those tasks will then have to be confirmed with the administrative units to ensure they can indeed be carried out.

COMPARISONS AND RECOMMENDATIONS

The staff must be able to compare the support concept for each of the courses of action that were developed, and to draw up a list of the pros and cons for each one. There will also be a need to draw up a list of all the critical events that will come out of each analysis for the benefit of the commander at the decision briefing. The staff must have developed their analysis sufficiently in depth to be able to make recommendations to the commander. The administrative staff briefing (at the decision briefing) must emphasize the following points:

- Support concept: priorities, main effort, centralized or not centralized, mode of replenishment (only if different from standard). Will support be provided out of the current location or will CSS elements have to be moved forwards? If they are to be deployed, then when? This should be determined during the **courses of action war game** and confirmed during the **plan war game**, together with all the other points that might not have been included in the normal procedure.
- Suggested administrative groupings, if any.
- Critical events, in time and space.
- Assessment of risk for each plan submitted.

PLAN DEVELOPMENT

In the course of the decision briefing, the Commander will have indicated which of the plans has been chosen. The staff will then have to prepare the orders. The deductions made from the estimate were used to produce the **support concept**. From this concept, and bearing in mind the estimate, the **administrative order** will be produced. **The support concept will be described in para 4 of the Operation Order**. This same **concept will be repeated in Para 3 of the Administrative Order** and further developed in the latter.

From the synchronization matrix, the administrative staff can determine when and where each of the administrative tasks identified by the estimate and confirmed during the war games will be executed. Thus, from this product of the OPP, the G4 can produce an administrative order that will fully describe the support concept and the tasks that the administrative or support units will have to carry out.

Although the process requires less analysis at this phase, the commander of the administration company of the units of the formation, using the same approach described herein, will be able to determine where he will have to deploy the unit echelons and be able to identify the supply routes as well as the routes for evacuating casualties and POWs towards the resources of the brigade. He will also be in a position to identify those combat stores that he will need in particular, etc.

Lieutenant-Colonel R. Préfontaine, CD

Annex C
The Administrative Estimate

This is a suggested template to follow in making an administrative estimate.

ADMINISTRATIVE ESTIMATE

In date of:

1. **Mission**: (According to the Commander's mission analysis.)
2. **Situation**: (Analysis of these factors will describe the environment in which CSS operations will be carried out.)
   - Enemy
   - Friendly forces
   - Terrain
   - Weather
   - Time and space
   - Security
3. **Analysis**: (This analysis will result in a concept of support.)
   - For each friendly action (of the synchronization matrix):
   - Transport — Requirements
   - Supply — Priorities
   - Maintenance — Availabilities
   - Medical — Limitations
   - Military Police — Deductions
   - Personnel
   - Concept of support for each action plan.
4. **Comparisons and recommendations**: (information addressed during the decision briefing.)
   - Concept of support
   - Groupings
   - Critical events
   - Risk assessment
5. **Plan development**: (from the concept of operations, the administrative estimate and the synchronization matrix.)
   - Administrative Order

AN UPDATE FROM THE COMBAT TRAINING CENTRE

THE LAV III/LEOPARD C2 MOBILE AUTOMATED INSTRUMENTATION SUITE FIELD TRIAL

by Major Bill Beaudoin, CD

In combat development studies it was concluded that the most critical capability requirement for the high-intensity battlefield will be for a mechanized infantry organization to form the basis of the all arms battle group.[1] *(1985)*

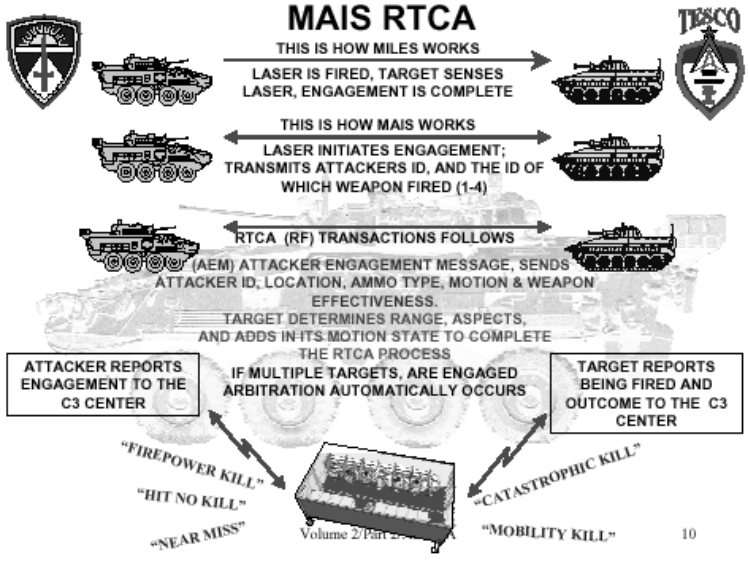
The principal fighting force of the U/A (units of action) brigade will be the FCS combined arms combat battalion.[2] *(2002)*

BACKGROUND

A key element in the successful fielding of the light armoured vehicle (LAV) III and the Leopard C2 is the development of validated and relevant company and combat team tactics, techniques and procedures (TTPs). On 16 November 2001, the LAV III/Leopard C2 mobile automated instrumentation suite (MAIS) field trial concluded in Gagetown, the result of approximately four years of staff effort, testing, simulation and analysis. The fielding of the LAV III and Leopard C2 by the Canadian Army will have a revolutionary effect on Canadian combined arms tactics. Accordingly, the various elements of the LAV III's command and control, tactical employment and maintenance have been considered and refined through the combat development process. These efforts will contribute to improving the army's war-fighting capability, and will put the best tools to effectively fight the respective combat systems in the hands of soldiers and their leaders. While it is understood that combat development is a continual process, it was considered that the increase in combat effectiveness must be scientifically measured and demonstrated to the field force as the vehicles' fielding nears completion.

To accomplish this, arrangements were made for an international trial with the United States (US) army. The weapons effects simulation (WES) used during the field trial was provided by Operational Test Command (OTC) in accordance with a project arrangement and the Canada-United States test and evaluation program (CANUSTEP). MAIS proved to be an extremely capable, soldier-friendly system providing an excellent WES platform. In particular, MAIS provided a real-time casualty assessment (RTCA) capability that was fundamental to the conduct of the trial. MAIS captured and displayed in real time all direct and indirect fire engagements between forces and simulated area weapon effects. This was coupled with an extremely effective after action review facility and capability. More importantly it provided the necessary data to provide scientific and analytical validity to the TTP development process. An illustration of the MAIS RTCA architecture is provided at Figure 1.

Following the direction of the Commander Land Force Doctrine and Training System (LFDTS), a Field Trial was conducted in three phases to develop validated company group and combat team TTPs:



MAIS Real-Time Casualty Assessment

Major Bill Beaudoin, CD

Phase 1—Constructive trial. A constructive trial utilizing the Modular Semi-Automated Forces (ModSAF) constructive simulation system was conducted to obtain verifiable data through the use of simulation. This was intended to support previous work that had been based solely on professional judgment;

Phase 2—Elementary field trial. An uninstrumented field trial was conducted to develop initial TTPs; and

Phase 3—Instrumented field trial. An instrumented field trial utilizing MAIS was conducted to provide instrumented and analyzed data to validate the draft TTPs.

The plan of tests developed for the MAIS trial was designed to investigate and answer three master questions. Does the LAV III augment the ability of the company, company group or combat team to:

- conduct operations in reduced visibility conditions?
- destroy the enemy?
- conduct combat operations?

Five scenarios were developed to serve as a framework for the collection of data for subsequent detailed analysis. The main variables within the trial plan of tests were operations during daytime, nighttime, and nighttime with illumination. The only dismounted activities permitted in all of the scenarios were those of the ERYX teams, RPG teams and dismounted reconnaissance. The five scenarios were:

Scenario one—LAV III company advance to contact;

Scenario two—LAV III company meeting engagement;

Scenario three—LAV III company advance to contact and assault;

Scenario four—mixed LAV III/Leopard C2 force in a blocking position;

Scenario five—mixed LAV III/Leopard C2 force in a meeting engagement.

AIM

The aim of this update is to stimulate discussion on the validity of the MAIS field trial with regards to its impact on the evolution of company and combat team tactical doctrine and army experimentation.

> *…the LAV will have greatly increased capabilities over any previous Canadian infantry vehicle. These increased capabilities will not have a major impact on Canadian doctrine, however, as that doctrine was written based upon the Infantry being equipped with a similar vehicle—APC 86. If anything, the introduction of the LAV APC will allow the Corps to achieve the doctrine* [3]

If you accept the logic provided in the Infantry Journal, why was it necessary to conduct the MAIS trial to provide answers to questions we already knew? On the surface, it is hard to rationalize the expenditure of funds and the commitment of significant personnel and equipment for seemingly insignificant gains. However, if you scratch away at that surface, and view the MAIS trial not as an isolated activity, but rather as one step in the process towards the development and refinement of the tactical and doctrinal application of the LAV III and Leopard C2, it gains in relevance and significance. The MAIS trial must also be viewed with regards to the collective whole. Specifically, lessons learned from the MAIS trial must be placed in context of what we already know from previous trials, experimentation, and the field force; what we would like to know (future study and effort); and where we would like to apply this information (doctrinal development, field force training applications, etc.).

LESSONS LEARNT—RE-LEARNT?

If you do not answer the questions, what is the point? One of the challenges during the development of the trial was establishing questions that could, in fact, be categorically answered through the use of dedicated instrumentation. The trial report explains this evolution and process in great detail. The three master questions were answered definitively. For the purposes of this article, the major findings were as follows:

- **Conduct operations in reduced visibility conditions**. The LAV III fights at night and during reduced visibility conditions effectively. Consideration must, however, be given to crew fatigue and the need for dedicated night training cycles. There was a demonstrated and quantifiable advantage over the BMP-2. The LAV III contributes to and enhances combat team situational awareness in all weather and light conditions. However, the LAV III target acquisition systems were degraded by certain weather conditions. These results were found to be comparable to the surveillance and target acquisition (STA) trial. Illumination proved to be a greater asset to the red force than that of the blue. The relevance and significance of illumination to the final assault was not observed. The Leopard C2 performed equally as well at night as during the day, but was found to be inferior to the LAV III in navigational aids (TACNAV).

The fielding of the LAV III and Leopard C2 will have a revolutionary effect on combined arms tactics.

- **Destroy the enemy**. The LAV III was not compared to the M113, as previous trials such as IRON RENAISSANCE have demonstrated the obvious—that the LAV III was much better. During company level testing the LAV III effectively contributed to the destruction of the enemy (the consequence of blue tactical error

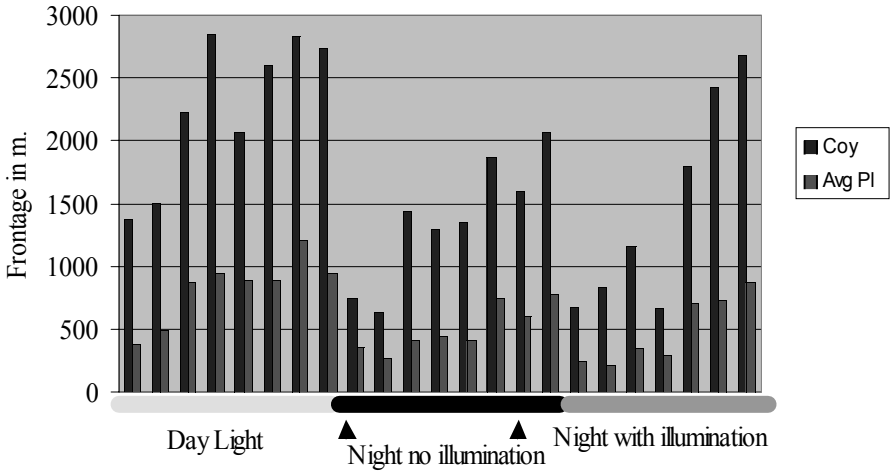
was also demonstrated). During the combat team level testing, there was a LAV/BMP loss exchange ratio (LER) of 1 to 7. This is partly attributable to the construct of the scenarios and the opportunity and limitations of BMP-2 at night. The LAV III demonstrated a clear, measurable and quantifiable advantage when engaging the BMP-2 at ranges between 800 and 2 000 metres.

- **Conduct combat operations**. Coupled with the specifics of trial LERs, the LAV III contributed to the combined arms team by destroying BMPs, thereby freeing Leopards to destroy T72s. This capability has previously not existed. The trial also demonstrated that this is subject to risk assessment, as the LAVs were vulnerable to tank fire if exposed too soon, or retained in position too long. The demonstrated mobility, firepower and STA capabilities of the LAV III during the trial have created a force multiplier allowing commanders to take greater risk. The addition of the 25 mm cannon has significantly increased the firepower of the combat team and provided commanders greater tactical flexibility. This improvement concurrently provides the battle group commander the same increased capability. This is very much in line with the recent initiatives in the US Army's objective force design, particularly with regards to its analysis of "…situational awareness, ISTAR, development of the situation out-of-contact and precision manouevre leading to acting first and finishing decisively."[4]

The trial demonstrated some issues quite categorically, that as stand-alone bullets, are reinforced here and served as food for thought. The reader is free to make whatever deductions or conclusions from them as they wish:

- Artillery caused 40 % of all red and 37% of all blue casualties. Keep in mind that each side only had a battery of either 155 or 152 mm guns with a specific and limited number of rounds allowed per iteration and artillery was only played during the first three weeks of the trial (company level testing only).

Company Frontages

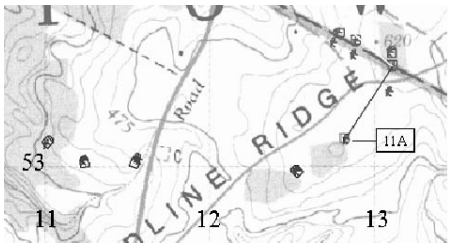


Company and average platoon frontages

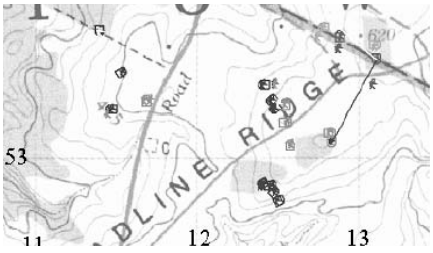
- During company level testing, the LER when the company commander was killed was 1 (LAV) to 0.7 (BMP), whereas when he remained alive, the LER was 1 to 2.63.
- Crew commander and turret skills are extremely important in the development of section and platoon commanders as they demonstrated direct fire results proportionally greater than their numbers.
- Company frontage averaged 1 700 metres but expanded to 2 000–2 800 metres. While there are terrain implications involved, demonstrated success at dispersed distances increased the confidence level of crews, platoons and the company.

The trial reinforced and confirmed some common tactical principles. It demonstrated that it will not be easy to locate a determined enemy, and therefore, the necessity and relevance of reconnaissance at all levels. The standard danger areas such as crests, roads and obvious features remain obvious (both to us and the enemy) and that current, low-level drills (ie. crest drill) remain valid and relevant. Movement on roads, although presenting an attractive option for the LAVs mobility and speed, still comes with the associated risk. The TTPs that were developed and validated throughout the process were found to be sound and effective tools for commanders in the field.

Despite the advantages that the LAV III brings to the battlefield over the BMP-2, tactical acumen still remains fundamental to success. There were numerous occasions on the trial where friendly forces were



11A is killed by 23A at 1010hrs



1A is killed by 23A at 1049hrs

Major Bill Beaudoin, CD

destroyed and/or ambushed by a well-placed, smart and aggressive enemy. On one particular occasion, a BMP-2 platoon navigated cross-country at night (while the LAV company remained road-bound) and destroyed the depth LAV platoon in less than 15 seconds. On several occasions, when the BMP-2 platoon was sited in reverse slope positions allowing for an 800 metre kill zone for their 30 mm cannon and flank shots for their AT-5, errors on behalf of the LAV company resulted in casualties that effectively neutralized the company. An example is illustrated below where within 39 minutes, five LAVs were destroyed within 800 metres of the enemy position

The trial also illustrated a number of training challenges that must be met to fully exploit the capabilities of both the LAV III and the Leopard C2. It was demonstrated that determining the location of the enemy posed the greatest challenge in "developing the contact" and the majority of friendly casualties were incurred during this process. This has implications with regards to the evaluation of crew/group cohesion

Soldiers from 2 RCR receiving training on a "MAISed" LAV III in September 2001

and the need for greater emphasis to be placed on target identification (thermal image training as an example). More emphasis should be placed during both simulation and live fire training on target engagements against realistic targets (turrets only, moving, different ranges, light conditions). The field trial easily demonstrated that more frequent TACNAV, global positioning system (GPS), Tactical Command, Control and Communication System (TCCCS) training is required as crews undergo significant skill degradation over time. Finally, the benefits offered by the MAIS WES system and RTCA for realistic training were religiously embraced by the trial participants. The direct application to the Canadian Manoeuvre Training Centre (CMTC) is obvious.

Documented trial evolution/methodology/conduct/Canadian Manouevre Training Centre

The use of a graduated, instrumented trial for the development of TTPs is new for the Canadian army. As such, it must be emphasized that the use of instrumentation, and the field trial itself, was designed to support, not replace, the professional knowledge and judgment of the field force commanders by providing detailed data to support decisions incorporated within the TTPs. It must also be understood that evaluation and analysis will be an ongoing process involving structured, experimental evaluation and through detailed coordination and supporting efforts by many of the Land Staff directorates and the field force.

The LAV III field trial was a very positive demonstration of the use of quantitative data collection from this sort of instrumentation, supported by qualitative observations from participants. The operational research participation in the LAV III field trial consisted of three components: advice given to the trial personnel in the Combat Training Centre on trial design, provision of weapon system characteristics to the US Army OTC for insertion into MAIS, and assistance in the analysis of results of the trial. While MAIS provided the greatest amount of quantitative data from the trial, the analysis included a number of other sources, such as focus groups, video, still photography, questionnaires, data collector observations, etc.

The objective of the field trial was to further illuminate aspects of the tactical employment of the LAV III and Leopard C2. Previously, operational research personnel were involved in the development of LAV III tactics through the IRON RENAISSANCE war game series conducted in the Operational Research Division in National Defence Headquarters (NDHQ), Ottawa in 1998 and Army Experiment 5 conducted in 2000 at LFDTS in Kingston. Experience with this LAV III experimentation, although conducted through modeling and simulation, was of considerable benefit during the field trial. The LAV III field trial has many parallels to experiments and research war games conducted in recent years by operational research personnel and military colleagues in Ottawa and Kingston. MAIS allows a trial to be carried out with real troops on real ground and to collect data to a fidelity equivalent to that done with a war game or simulation like Janus or ModSAF, e.g., the results of engagements during mock combat.

The MAIS field trial (and report) provided the following:

- A comparison of simulation systems (ModSAF, Janus and MAIS) used throughout the various phases of the field trial.
- A comparison of the quantitative results produced through the use of constructive simulation (ModSAF and Janus) and live simulation (MAIS).
- Demonstrated and documented trial methodology throughout the complete breadth of its evolution, development, conduct and post conduct activities.
- A demonstration of the value and importance of dedicated and professional analytical teams to support all aspects described above.
- Significant inroads into American experimental and operational testing to include an excellent working relationship with US Army OTC.

DIRECTION FOR FUTURE EXPERIMENTAL ENDEAVOURS

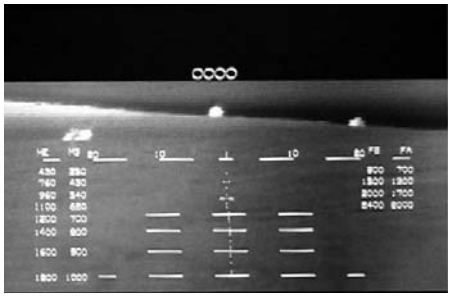
It is envisioned that as one of its roles, CMTC should be capable of supporting force development experimentation.[5] As such, the MAIS trial has provided invaluable information on the structural, organizational and operational conduct of trials of this magnitude

that should be some assistance to the developers of CMTC. This includes those tools utilized by the MAIS trial and provided by OTC with respect to the MAIS and those developed by the trial organization themselves, such as low-level standard operating procedures (SOPs) for data collectors, control centre (or tactical operations centre—TOC operators), information flow charts for the processing of data, functional layout diagrams and numerous other aids. All are included in the trial report.

TIP OF THE ICEBERG—DEMONSTRATED FUTURE EFFORT

The completion of the field trial has not provided the army with all the answers. Given limitations to the trial, further study is needed to expand our base of knowledge. Specifically, further research and analysis should occur on the following:

- **Command and control**. Further research is required on the issues surrounding command and control. Specifically, the impact of the introduction of situational awareness systems (SAS) and the continuing digitization of the field force must by analyzed. The volume of radio traffic has increased substantially due to greater dispersion and the more aggressive application of the LAV III as a firing platform. The issue of command and control between mounted and dismounted elements of the combat team could not be studied due to trial limitations. Analysis of the trial radio tapes may provide further information to this matter. This is also ongoing within the purview of the Army Digitization Office Kingston (ADOK).
- **Actions on the Objective**. Given limitations imposed on the trial, the study of the assault could not be conducted. With the establishment of the Canadian Manoeuvre Training Centre and WES, experimentation should be conducted to provide data on the dismounted assault. While the field trial demonstrated that enemy vehicles on the objective could effectively be destroyed or neutralized by direct fire, there was no ability to determine the impact of a "dug-in" enemy on the assaulting force. Without this information, it cannot be assumed that the enemy can be destroyed purely by fire.
- **Sustainment**. Further study is necessary to evaluate the sustainment capability of the LAV III company. Although the doctrinally based Operation CYCLOPS echelon is available as a model, current LAV III company echelons have developed in an ad hoc fashion as a result of not having the specialized vehicles for sustainment. Furthermore, ammunition consumption will be a major factor in LAV III sustainment. Further analysis through the use of ModSAF and further refinement and assessment of the MAIS data may provide a clearer picture.
- **LAV III with medium range anti-armour weapon (MRAAW) and long range anti-armour weapon (LRAAW)**. LAV III currently has no capability to engage tanks. As was demonstrated on the field trial, LAV III is very vulnerable to enemy tanks and cannot participate in their destruction. Instead, the LAV III is limited to engaging BMPs. The addition of a MRAAW or LRAAW would provide a more potent capability to the company and combat team. It would allow the LAV III even greater flexibility to be employed on flank and security tasks. Further analysis through the use ModSAF should demonstrate this.
- **LAV III with close reconnaissance**. The field trial demonstrated that significant effort was required to find and identify the enemy. It is recommended that the same plan of tests be conducted on ModSAF, with the provision of close reconnaissance.
- US fatigue studies. During the Field Trial, trial participants commented on the demands on crew members through the extended use of target acquisition systems at night. To maximize the capability of fighting in reduced visibility conditions, we will need an understanding of the effect of fatigue on crew members and steps that can be taken to mitigate these effects. The US trial has indicated that fatigue studies exist and are available from the US Army.
- Research into information friend or foe (IFF) Systems. Operations in reduced visibility conditions place greater demands on crews to correctly identify potential targets before engagement. The field trial demonstrated that fratricides will occur, particularly as the ability to identify thermal targets remains difficult. Although thermal imaging armoured fighting vehicles (AFV) recognition training is important, developments into the fielding of IFF for ground based forces are considered an important area for research and collaboration.
- **Comparative Analysis BMP-3**. The field trial demonstrated the effectiveness of LAV III against a BMP 2 equipped with a 30 mm cannon and rudimentary target acquisition systems. Future, comparative analysis should be conducted on ModSAF against a more sophisticated enemy. It is recommended that the plan of tests conducted on the field trial be conducted utilizing a BMP-3 with modern STA capabilities.



Friend or FOE?—LAV III Field Trial Night Iteration

THE COMMUNICATION PLAN

The lessons learned from the MAIS Trial are being distributed in a wide range of venues. The trial report itself was presented to Commander LFDTS on 1 March 2002 and accepted. Concurrently, the combat team TTPs and the LAV

Major Bill Beaudoin, CD

company tactics were approved. The following initiatives are underway to distribute the lessons learned from the MAIS field trial and associated efforts:

- **Trial report**. The trial report is a three-volume report produced in Adobe Acrobat format encompassing the following:
  - **Volume one–trial report**. This volume contains the executive summary, main body, and all the associated annexes providing the data, analysis and history of each iteration.
  - **Volume two–parts one and two**. This volume contains the trial history and trial conduct portions of the report. They include all the information relevant to the evolution of the trial and those tools and aids developed or utilized during the conduct of the trial.
  - **Volume three–video history**. This volume captures all the battle history iterations on MPeg and includes the informational trial video produced by OTC and associated images and MPegs of trial activities. The battle iteration MPegs are an extremely good tool for training, providing tactical images of all aspects of the trial.
- It is the intent that the complete trial report will be placed on the DIN by LFDTS in the near future.
- **Tactics manuals**. The tactics manuals (currently TTPs) have been finalized and are in the process of final editing and translation. It is expected that LFDTS will have them ready for distribution by the end of September 2002.
- **Trial video**. To compliment the trial report, a trial video has been produced and is in the process of being distributed across Canada concurrent to the release of this article. This professionally produced video incorporates the main lessons learned from the trial. It highlights lessons learned in the categories of sensors, firepower, movement, communications, battlefield survival and tactical lessons. Screenings will be provided to all major army bases and formations.
- **Army Lessons Learned Centre (ALLC)**. The ALLC has been monitoring the outcomes of the trial and participated in the final series of presentations to Commander LFDTS. They followed this up with a visit to CTC on 11 June 2002 with a view to further developing themes for subsequent editions of Dispatches.
- **Personnel, leadership organization, training, equipment, and doctrine (PLOTED) Imperatives**. It is the intent to incorporate the lessons learned and further refine the issues that were brought forth from the trial through this process. This includes briefings to Commander LFDTS and subsequently to the Combat Development Board and Army Council on the myriad of issues related to the employment of the LAV III and Leopard C2.

CONCLUSION

The integration of the LAV III and Leopard C2 into the army's tactical inventory has evolved in a timely, progressive and efficient manner. Concurrently, the various elements of their command and control, tactical application and maintenance have consistently been refined through the combat development process. All these efforts have been driven to improving the army's war-fighting capability. The end-state of these initiatives has always been to put in the hands of soldiers and their leaders, the best tools to effectively fight the respective vehicles. While it is understood that combat development is a continual process of study, experimentation, evaluation and re-evaluation, the importance of providing concrete and visible evidence of this to the field force cannot be understated. The LAV III/Leopard C2 MAIS field trial has demonstrated to the army that the TTPs for the LAV III company and the LAV III/Leopard C2 combat team are effective and validated guidance for the field force. All of this has been realistically tempered by the human factor, as demonstrated during the MAIS field trial. Soldiers and commanders have accepted and met the challenges provided by the use of a real-time casualty assessment tool.

Despite the advantages that the LAV III brings, tactical acumen still remains fundamental to success.

ENDNOTES

1. LCol I.D. Barnes and Maj N.B. Jeffries, "The Mechanized Battlefield: A Canadian View," *The Mechanized Battlefield: A Tactical Analysis*, Willowdale:Pergammon Press, 1985, p. 131.
2. Maj (Retired) George A. Durham, LCol (Retired) Frank T. Myers II and LCol (Retired) Charles L. Hernandez, "The FCS-Based Force in Future Battle," *Field Artillery* (March-April 2002), pp. 10-13.
3. http://ctc.gagetown.mil.ca.infantry/infjrn/vol32/apc_e.htm, "LAV APC Doctrine," *The Infantry Journal*, (Volume 32–Spring 1988), p. 9.
4. Col M. Ward, Commander CTC, Memo 4500-1 (Comd) 22 May 2002, Future Battle.
5. LCol D.P. Casarsa, Director Army Training 4, Memo 3136-2058 (DAT 4) 28 May 2001, Canadian Manoeuvre Centre Concept of Operations–Revised.

A SELF-EVIDENT TRUTH:

SPECIAL OPERATIONS FORCES AND INTELLIGENCE IN ASYMMETRIC WARFARE

by Lieutenant-Colonel Bernd Horn, CD

The tragic attack on the twin towers of the World Trade Center in New York on 11 September 2001 underlined but another dramatic change in world affairs that have occurred in the recent past. The fall of the wall in 1989-1990 created a new global geopolitical security environment. Gone was the stability of the Cold War with its predictability and carefully delineated spheres of influence and interest. Very quickly the world seemed to erupt into a series of conflicts rooted in ethnic, cultural, nationalistic and religious divergence. With this emerged a number of failed states. In addition, the end of the Cold War also heralded the egress of a single global super power. Next were the Gulf War and Balkan stabilization campaigns throughout the 1990s that showcased the omnipotence of air power and technology. As a result, analysts, military commanders and scholars began to discuss the presence of a Revolution of Military Affairs, particularly in light of the impact of information technology. But, central to these events was the realization that the United States of America, as well as its close allies were economically, militarily and technologically exponentially superior to any potential aggressor.

However, the attack on 11 September (9/11) served as a very deadly indicator of yet another fundamental change in the manner in which conflict would be pursued around the globe. To those who see the United States and its allies as their enemy, asymmetric warfare - the use of methods and tactics by which the superior military technology and combat power of an opponent can be rendered ineffective, became the only viable strategy. As such, a small group of Islamic extremists armed with ninety-nine cent box cutters and fully fueled commercial airliners were able to inflict a devastating strike, unthinkably, on American soil.

This attack prompted an immediate response, namely the war on terrorism which has been relentlessly pursued with the hallmark determination of American will. But, the assault on the American homeland also incited a sense of fear and impotence. The unpredictable nature of asymmetric warfare, particularly when utilized by well-organized, mobile, highly trained and well financed terrorist groups or other opponents is often viewed by the public and those responsible for national security as an insurmountable battle. "If you're throwing enough darts at a board," conceded one US official, "eventually you're going to get something through."[1]

Asymmetric warfare, as challenging as it may be, is expugnable.

But this sense of helplessness is abdicable. Asymmetric warfare, as challenging as it may be, is expugnable. Key to success in this realm of warfare are Special Operations Forces (SOF) and reliable, timely intelligence. Given the necessary detailed information, SOF are capable of providing highly skilled soldiers capable of a wide range of lethal or non-lethal responses that can disrupt, preempt or destroy possible attacks. However, although the importance of these two components are self-evident there exist some problems that must be overcome. SOF culture, the failure to use imaginative and innovative approaches to identifying threats as well as solutions to them, and the failure to share information and effort are barriers that prevent the most effective response to asymmetric threats. A better understanding of SOF and intelligence in asymmetric warfare, as well as the existing problems therein, provide a means to counter future travesties such as 9/11.

In the subsequent response to the events of 11 September, namely the war on terrorism, an inordinate emphasis was placed on SOF early on. This is not surprising. SOF are traditionally defined as forces "specially selected, specially trained, specially equipped, and given special missions and support."[2] Born largely in the chaos of World War II when the Allies were limited in their ability to strike back due to their unpreparedness, initial defeats and limited resources, SOF became the principle tool for offensive action.[3] The image of SOF that developed was that of the tough hardened killer commando capable of violence and efficient killing. However, their definition, much like their roles and capabilities has evolved. Currently, SOF are defined as "Specially organized, trained and equipped military and paramilitary forces that conduct special operations to achieve military, political, economic or informational objectives by generally unconventional means in hostile, denied or politically sensitive areas."[4] This updated doctrinal definition captures the evolution of SOF from their primarily World War II origins. It highlights the transition from a commando raid mentality to the use of these forces for political, economic or informational objectives in a very risk averse political environment.[5]

Special Operations Forces fill this mandate quite adeptly. They are

Lieutenant-Colonel Bernd Horn, CD

generally mature professionals with leadership abilities, specialized skills, equipment and tactics. Moreover, they normally have a regional focus and specialized language skills, as well as more developed political and cultural sensitivities. In addition, they have a small, flexible, joint-force structure.[6] But it is the individual who is key. The SOF soldier is defined by his intellect, role and philosophical approach to warfare. Moreover, he or she is capable of operating in an environment of ambiguity, complexity and change. "The fingers on our future triggers," asserted General Peter Schoomaker, former Commander in Chief (CinC) US Special Operations Command, "must be controlled by willing warriors of courage, compassion, and judgment–individuals of character with strong legal, moral, and ethical foundation–organized into dynamic and agile joint SOF teams."[7] SOF operators have evolved from the toughened commando killers to warriors capable of adapting and thinking through the complex kind of environment that the military now finds itself in. Surroundings that require a warrior ethos combined with language proficiency, cultural awareness, political sensitivity, and the ability to use Information Age technology. In essence, they are warrior-diplomats.[8]

It is because of this strength that SOF can fulfill so many vital roles and missions. "Our national military strategy challenges us," explained Schoomaker "to 'shape the international environment and respond to crises while preparing now for an uncertain future."[9] SOF are geared to conduct special missions that are high risk but also high payoff–missions that "can neither fail nor leave perception of failure." These are normally missions that fall into the gray area of political / military operations that more often than not are politically sensitive. They are also missions that no other force can accomplish.[10] The principle missions of SOF are:

- **Counter-proliferation**—combating the proliferation of nuclear, biological and chemical weapons; intelligence collection and analysis; support of diplomacy, arms control and export controls.
- **Combating Terrorism**—preclude, preempt, and resolve terrorist actions throughout the entire threat spectrum, including anti-terrorism and counter-terrorism.
- **Foreign Internal Defence**—organize, train, advise and assist host-nation military and para-military forces to enable these forces to free and protect their society from subversion, lawlessness and insurgency.
- **Special Reconnaissance**—conduct reconnaissance and surveillance actions to obtain or verify information concerning the capabilities, intentions, and activities of an actual or potential enemy or to secure data concerning characteristics of a particular action.
- **Direct Action**—conduct short-duration strikes and other small-scale offensive actions to seize, destroy, capture, recover, or inflict damage on designated personnel or material.
- **Psychological Operations**—induce or reinforce foreign attitudes and behaviours favorable to the originator's objectives by conducting planned operations to convey selected information to foreign audiences to influence their emotions, motives, objective reasoning, and, ultimately, the behaviour of foreign governments, organizations, groups and individuals.
- **Civil Affairs**—facilitate military operations and consolidate operational activities by assisting commanders in establishing, maintaining, influencing, or exploiting relations between military forces and civil authorities, both governmental and non-governmental, and the civilian population in a friendly, neutral, or hostile area of operation.
- **Unconventional Warfare**—organize, train, equip, advise, and assist indigenous and surrogate forces in military and paramilitary operations of long duration.
- **Information Operations**—actions taken to achieve information superiority by affecting adversary information and information systems while defending one's own information and information systems.

Collateral activities include:

- **Coalition Support**—integrate coalition units into multinational military operations by training coalition partners on tactics and techniques and providing communications.
- **Combat Search and Rescue**—penetrate air defence systems and conduct joint air, ground, or sea operations deep within hostile or denied territory, at night or in adverse weather, to recover distressed personnel during wartime or contingency operations.
- **Counter Drug Activities**—train host-nation counter drug forces and domestic law enforcement agencies on critical skills required to conduct individual and small-unit operations in order to detect, monitor, and interdict the cultivation, production, and trafficking of illicit drugs targeted for use in the US.
- **Humanitarian Demining Activities**—reduce or eliminate the threat to non-combatants and friendly military forces posed by mines and other explosive devices by training host-nation personnel in their recognition, identification, marking, and safe destruction; provide instruction in program management, medical and mine-awareness activities.
- **Security Assistance**—provide training assistance in support of legislated programs which provide military training and other defence related services by grant, loan, credit, or cash sales in furtherance of national policies or objectives.

- capability to conduct actions abroad in support of national foreign policy objectives so that the role of the conducting government is not apparent or acknowledged publicly.[11]

The wide array of principle and collateral missions highlight the innate flexibility of SOF. They provide a self-contained, versatile and unique capability, whether employed alone or complementing other forces or agencies to attain military strategic or operational objectives. In contrast to conventional forces, SOF are generally small, precise, adaptable and innovative. As a result, they can conduct operations in a clandestine, covert or discreet manner.[12] They are capable of organizing and deploying rapidly and can gain entry to and operate in hostile or denied areas without the necessity of secured ports, airfields or road networks. In addition they can operate in austere and harsh environments and communicate worldwide with integral equipment. Moreover, they deploy rapidly at relatively low cost, with a low profile and have a less intrusive presence than larger conventional forces. Therefore, they offer decision makers a wide array of options, strategic economy of force and a "tailor to task" capability "particularly in crises that fall between wholly diplomatic initiatives and the overt use of large warfighting forces."[13] They can utilize lethal or non-lethal responses, as well as the precise and discriminating use of force In essence, they provide the largest range of capability and response from major theatre wars, small scale contingency operations to humanitarian support missions. Not surprisingly, due to their make-up and capability they are extremely adept at countering transnational and asymmetric threats.[14]

SOF are capable of providing direct action capability against high value, critical targets–including raids, ambushes, direct assaults, the designation of targets for other high tech weapon delivery systems, hostage rescue and combat search and rescue. They also have a covert intelligence collection capability through special surveillance and reconnaissance, and can therefore obtain specific, exact and time sensitive information of strategic or operational significance in regard to high value targets in hostile or denied territory. Furthermore, they can conduct counter-terrorism operations including applying highly specialized techniques to find, prevent, deter, pre-empt or resolve terrorist incidents.[15]

SOF have evolved from toughened commando killers to warriors capable of adapting and thinking through the complex environment the military now finds itself in.

For example, the ongoing war in Afghanistan has been described by one American military expert as "primarily a war in the shadows" now. As such, small teams of SOF troops are spotting targets for bombers and working with CIA and foreign militaries with a focus on small-scale efforts to track down Taliban leaders in southern Afghanistan and al-Qaeda fighters who have fled across the border into Pakistan. Currently, these small SOF teams of about a dozen Special Forces personnel are establishing outposts deep in enemy territory and are working with Afghan units approximately 120 strong.[16]

Despite the small footprint, SOF are extremely effective. Their contribution to date in the war against terrorism has been significant. It took only 49 days from the insertion of the first teams with Northern Alliance forces to the fall of Kandahar. This was achieved with approximately 300 Special Forces (SF) soldiers. These operators rallied and forged cohesive teams out of the unorganized anti-Taliban opposition groups and more importantly, using a small amount of high-tech targeting equipment, brought the weight of American airpower down on Taliban and al-Qaeda fighters. Air strikes brought down by one of the first SF teams in country, aided by a lone Air Force combat controller, are credited with killing as many as 3,500 fighters and destroying up to 450 vehicles.[17] The growing importance of their role as combat control teams is evident. In Afghanistan, 60 percent of munitions dropped were precision guided compared to 35 percent during the Kosovo air campaign in 1999 and 6 percent in the Gulf War in 1991.[18]

As stated earlier, SOF are also very economical. The American SOF strength is approximately 45, 690. This includes an active force element of 29,164 personnel and a reserve component of 10,043.[19] Their budget for Fiscal Year (FY) 2001 was $3.7 billion.[20] Their proposed budget for FY 2003 is $4.9 billion, an increase of 21 percent.[21] Yet, despite the significant capability they represent, proven by their steadily growing operational tempo, their funding envelope represents only about 1.3 percent of the Department of Defense (DoD) total budget.[22] During any given week more than 5,141 SOF personnel are deployed to 149 countries and foreign territories.[23]

But for Special Operations Forces to be effective they need dependable intelligence. Intelligence, quite simply, is the product of processed information concerning hostile or potentially hostile forces. Its role is "to provide timely, relevant information to policymakers, decisionmakers, and warfighters."[24] To accomplish this an intelligence cycle which includes the direction, collection, processing and dissemination of information is used.

Special operations must be planned in considerable detail and SOF rely on accurate, up to date intelligence to ensure that plans meet precisely the situation that can be expected in the intended target area. Therefore, access to timely, detailed, tailored, and fused all-source intelligence is essential for a successful operation.[25] For example, on 9 April 1973, a small team of

Lieutenant-Colonel Bernd Horn, CD

Israeli Sayeret Matkal was landed on the Lebanese coast where it met up with Mossad agents who drove them into Beirut. The SOF operatives were armed with complete intelligence of their targets. They had full details on the leader of the Black September movement (who was responsible for the Munich massacre in 1972), the Chief of Operations of the Palestine Liberation Organization (PLO), and the PLO's spokesman in Beirut, as well as the apartments and neighborhood in which they lived. As a result, the unit successfully carried out reprisals against the targets, as well as destroying, with the assistance of Israeli paratroopers, PLO weapons factories and fuel dumps in the area of Tyre and Sidon.[26]

In another similar case, on 12 July 1993, the Americans conducted a successful raid on the Abdi House in Somali based on "excellent intelligence." The building was identified as a key Militia headquarters. Furthermore, the responsible commander for planning the raid was given details on daily meetings that occurred at the target house–time, place and who was normally present. In addition, intelligence also identified the Somali leaders who attended as those responsible for planting a mine that killed US service personnel, as well as planning and orchestrating all the acts of violence against the US and UN Forces up to that point. Importantly, the information given also included a five day window during which a strike could be conducted without endangering any innocent civilians who worked or frequented the building. In the end, a potent threat was neutralized with minimum collateral damage.[27]

Conversely, poor intelligence has the opposite effect. In December 2001 the bombing of an Afghan wedding party killed 110 of 112 people. An intelligence source stated that this was a gathering of al-Qaeda terrorists. To the pilots in the air the large gathering of cars converging on the hamlet seemed to bare out the report. As a result, a six-hour assault commenced. Similarly, on 24 January 2002, American Special Operations Forces raided a compound in Uruzgan province killing 16 civilians, once again based on faulty intelligence. The victims were not Taliban or al-Qaeda. In this case, the Pentagon conceded the error.[28] Even so, the effect these attacks had on eroding support for the American effort in Afghanistan is not hard to calculate.

Nonetheless, the interface is clear. "Everybody wants great intelligence," asserted one Special Forces and CIA veteran, "You can't do anything without it."[29] In the context of asymmetric warfare, intelligence and SOF are primordial. "In the realm of military affairs and national security," declared American strategist Steven Metz, "asymmetry is acting, organizing, and thinking differently than opponents in order to maximize one's own advantages, exploit an opponent's weaknesses, attain the initiative, or gain greater freedom of action. It can be political-strategic, military-strategic, operational, or a combination of these. It can entail different methods, technologies, values, organizations, time perspectives, or some combination of these. It can be short-term or long-term. It can be deliberate or by default. It can be discrete or pursued in conjunction with symmetric approaches. It can have both psychological and physical dimensions."[30] Doctrinally, an asymmetric threat is a concept "used to describe attempts to circumvent or undermine an opponent's strengths while exploiting his weaknesses, using methods that differ significantly from the opponent's usual mode of operations."[31]

for Special Operations Forces to be effective they need dependable intelligence

In the aftermath of 9/11 it has become self-evident that reacting to attacks is no longer an option due to the catastrophic casualties that can entail. Preemptive action becomes key. In this vein, SOF provides a flexible, pro-active and swift means of responding in either a lethal or non-lethal manner to a threat. They can conduct precise strikes against groups, installations, infrastructure, production facilities, transport or communication nodes to disrupt or stop possible attacks. The more complete and precise the intelligence, the greater will be the likelihood and degree of success of the intervention.[32] The theory is simple. However, practice is a different question.

Substantial difficulties currently exist that detract from the effectiveness of Special Operations Forces and the use of intelligence in combating enemies that rely on asymmetric approaches to attacking the United States and its allies. The first problem is SOF culture. The cult of elitism that is often endemic within groups that are specially selected develops and nurtures an "in-group" mentality that is dangerously inwardly focused. They trust only themselves that is those who have passed the rigorous selection standards and tests. Sociologist Donna Winslow of the University of Ottawa confirmed the negative aspects that might arise from an emphasis on the exclusivity of this "warrior cult." It spawns an assailable belief, she insisted that "only those who have done it know, or can be trusted or more dangerously yet can give direction."[33] "Too often," observed renown military analyst Tom Clancy, "there's friction, competition, and rivalry—a situation often made worse by the sometimes heavy-handed ways of the SOF community."[34] In the end, this reluctance to work with others, compounded by arrogance, breeds animosity, mistrust and barriers to cooperation and the sharing of information with outside agencies.

A second negative component to SOF culture is their exaggerated emphasis on security. Although operational security is paramount, secrecy in and of itself often becomes a tool to avoid scrutiny and build barriers to the outside world. This security consciousness has also led in some cases to a refusal to use

computers that are connected to the outside world. This inflated sense of secrecy is laughable at times. The need for security is normally invoked to avoid cooperating or providing information or assistance. Yet, paradoxically, the compulsion to ensure that they are easily recognized from their conventional military brethren, in all settings, seems to override the need for secrecy. In fact, it compels them to utilize equipment, uniforms and dress codes completely apart from the normal military patterns, even when not required to do so for operational purposes. As a result, they are routinely easily identified. In the end, this mind-set is just another barrier to full cooperation and information sharing.

A third element of the culture is the "break-in" mentality. Former SEAL commander, Navy Captain William McRaven, argues in the seminal work *Spec Ops* that "all special operations are conducted against fortified positions" and he believes "these fortified positions reflect situations involving defensive warfare on the part of the enemy."[35] This historical paradigm is rooted in the hostage taking scenarios of the previous three decades. It has prompted the creation of a myriad of data bases providing information on terrorist groups, blueprints for buildings, aircraft, ships, etc. to assist with the planning of a rapid reaction by counter terrorist forces. Moreover, it develops a mind set of drills, which simplifies things for the military mind and importantly, allows for efficient, effective response in a crisis situation. However, it is totally inappropriate for asymmetric warfare. The emphasis, as 9/11 has shown, must now be on preemption. As terrorist expert professor Stephen Sloan has stated, "we can't afford the move [by terrorists] to the target anymore."[36]

The need to preempt the next major attack highlights the next major difficulty in ensuring the most effective use of SOF and intelligence in the context of asymmetric warfare, namely, the need for visionaries and the use of imagination. "I am," asserted Albert Einstein, "enough of an artist to draw freely upon my imagination. Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world."[37] However, commanders and decision makers, often become slaves to doctrine, if not dogma, and their own limited experience. There is a clear reluctance to let unbridled critical thinking flourish. To maintain this mind set will be crippling.

The Chinese have written that "warfare is a dynamic process full of randomness and creativity. Any attempt to tie a war to a set of ideas within a predetermined plan is little short of absurdity or naivete."[38] They argue that what is needed "to grasp the ever-changing battlefield situation is greater use of intuition rather than mathematical deduction."[39] Steven Metz, a research professor at the US Strategic Studies Institute since 1993, agrees. "Innovation and creativity," he believes, "must be nurtured and valued throughout both the uniformed and DoD civilian ranks. While iconoclasts and nonconformists should not rule the military they should be valued, preserved and heard. Experimentation and research should focus on strategic and operational adaptability."[40] These appeals for a more imaginative and creative outlook are significant. One must always consider the opposition. Sheik Ahmed Yassin, founder of the terrorist group Hamas, boasted "We have the best minds working with us."[41]

In asymmetric warfare, we must try and stay out ahead of potential attackers. We must be able to visualize the threats and utilize a process of reverse engineering. What targets are out there? What would be needed to accomplish such an attack? Who is capable of executing the attack? Supporting it? Financing it? Once answers to these questions are determined SOF can be used to preempt, disrupt and / or destroy potential threats. This is not a silver bullet. The list of potential targets is legion. However, based on creative thinking, risk acceptance and available intelligence, trigger points can be established for each of the potential targets and necessary steps taken in a timely manner.

For example, an analysis of Tom Clancy's 1994 novel *Debt of Honour* should raise some red flags. The entertaining book ends with a commercial Boeing 747 airliner being crashed into the White House with the resultant death of the president. But this is not so far-fetched. Even Clancy cannot claim full credit for this scenario. In February 1973, the Israelis shot down a Libyan Boeing 727 airliner in the Sinai which had become lost in a severe sandstorm while en route from Benghazi to Cairo. As a result it overflew Israeli territory prompting the Israelis to fear it had been hijacked and was being used for a suicide attack on their capital. They shot it down with the resultant loss of 106 lives.[42] Likewise, the hijacking of Air France Airbus Flight 8969 on 24 December 1994, triggered similar fears by French authorities. Reports from their consulate in Oran and embassy in Algiers, and corroborated by statements from some of the released hostages who confirmed the hijackers had explosives and spoke of martyrdom, led to the belief that the terrorists were planning to blow up the aircraft over Paris.[43] That same year French authorities foiled a plot by the Algerian Armed Islamic Group which had plotted to fly an airliner into the Eiffel Tower.[44]

In 1995 authorities in the Philippines thwarted a plan masterminded by Ramzi Yousef (who also plotted the 1993 World Trade Center bombing) for mass hijackings of American aircraft over the Pacific, as well as plans to crash a plane into the CIA building at Langley.[45] Four years later, in September 1999, a Library of Congress report concluded that suicide bombers could "crash-land an aircraft. . .into the Pentagon, the. . .CIA or the White House."[46] Subsequently, from January-September 2001, the FAA issued 15 memorandums to the aviation industry warning of the possible imminent hijackings of airliners inside the United States.[47]

Not surprisingly, a French investigator affirmed that "since

Lieutenant-Colonel Bernd Horn, CD

1994, we should all have been viewing kamikaze acts as a possibility for all terrorist hijackings."[48] But, not everyone saw it this way. "I don't think," declared Condoleeza Rice in the fall of 2001, "that anybody could have predicted that these people would take an airplane and slam it into the World Trade Center."[49] Although it is often unfair to judge actions and decisions after the fact, particularly with the information that comes to light with the fullness of time, one must question whether we should have. With the use of imagination and the process of reverse engineering possible threats, certain trigger points become obvious. These should prompt the appropriate agencies to take the necessary action. In light of the aforementioned events, as well as Clancy's gripping thriller, the reports of plans to hijack aircraft and use them as weapons and evidence from a flight school that there were individuals wanting to learn to fly large aircraft–not land or take off–merely fly–one must wonder why alarm bells were not triggered. The revelations of the intelligence blunders leading up to 9/11 are worrisome.

Once again, the concept is simple in theory but is often stymied by the greatest of problems in the realm of SOF and intelligence–the "stove piping" of information and effort. Analysts and scholars have long argued that "in defence of the status quo, territorial remits among the centres of intelligence have been guarded with tenacity and turf wars have been bloody even in the corridors of power."[50] This has normally prompted the various agencies such as customs, the police, the various intelligence agencies themselves, as well as key government departments such as foreign affairs and defence to establish their own independent intelligence organizations. "It is easy to talk about cooperation at the national and international level," conceded John Starnes a former director general of the RCMP Security Service from 1970-1973, "but quite another matter to achieve it. For example, at the national level I guess that far too much effort and time still goes into ironing out interdepartmental disagreements about territory and other petty matters, as opposed to actually countering terrorism."[51] Mike Kelly, a Canadian Security Intelligence Service (CSIS) analyst confessed that "Clearly there are tensions between agencies because of over lapping mandates."[52] One senior military intelligence officer lamented "the other organizations are in an 'info-protect' mind set."[53]

These revelations are not surprising. Special committees on Terrorism and Public Safety have long raised the issue of the lack of cooperation between the RCMP and CSIS, the greatest example being the failure to communicate an actual threat in the case of a Punjabi Cabinet Minister visiting Canada in the 1980s.[54] Professor Wesley Wark told the Canadian Standing Committee on National Defence and Security that the nation faces an intelligence crisis in part due to a "dysfunctional process for dissemination and usage of intelligence at the highest levels of government."[55]

This problem is widespread. Tom Clancy, echoed the views of most analysts and scholars when he observed that "the various American intelligence agencies may well be the most stovepipe-ridden community in the history of humankind."[56] The Commission on the Roles and Capabilities of the United States Intelligence Community agreed. They concluded that one of the key discernable overarching themes that emerged from their study was the "need for intelligence agencies to operate as a 'community'."[57] In the aftermath of the 18 April 1983 bombing of the US embassy compound in Beirut which witnessed 63 killed and more than 100 injured, a five-man team of the Intelligence Support Activity (ISA) was dispatched to Beirut to examine the procedures by which intelligence on terrorist threats was being collected, processed and disseminated and subsequently used in threat analyses and assessments as part of the decision making process governing security measures for American military and civilian personnel in Beirut. When the team arrived, they encountered a hostile reaction from the embassy staff and CIA station and military personnel. They were seen as interlopers trespassing on their territory. The team very quickly discovered that there was little if any security cooperation among the various US elements in Lebanon.[58]

Very little changed in the next two decades. Congressman Saxby Chambliss, Chairman of the House Intelligence Subcommittee on Terrorism and Homeland Security stated that pre-9/11 counter-terrorism investigations were decentralized at the FBI's 56 field offices, and that they were actually discouraged from sharing information with one another or headquarters.[59] One former Clinton Administration official conceded "The FBI has a long pattern of not sharing information with others. Now its not even sharing the information with itself."[60] Sources in the Pentagon, White House and Congress were amazingly of a similar mind. They all conceded that 9/11 was "an abject intelligence failure."[61] One senior US official lamented, "They didn't see it; they didn't analyze it; they didn't locate it or disrupt it."[62] American Defense Secretary Donald Rumsfeld acknowledged that "We have not made many strides since I've been here in improving the intelligence take."[63]

If there was any doubt, the full scope of the intelligence community's long standing failure to work together was graphically illustrated in the aftermath of the 11 September 2001 terrorist attack. Before the dust had even settled, a litany of accusations and revelations began to seep out. A brief review is in order. By mid-2001 many of those in the know–intelligence, law enforcement, bureaucrats in a dozen countries were aware and worried that a major terrorist strike was imminent.[64] By the summer of 2001, intelligence services were picking up enough chatter about a terrorist attack to prompt the Defense Department to put its troops on full alert on 22 June. In addition, it ordered six ships from the Fifth Fleet

based in Bahrain to steam out to sea to avoid any attacks on them.[65] By early July, Ben Bonk, Deputy director of the CIA's counter-terrorism center provided evidence that al-Qaeda was planning "something spectacular." The evidence was supposedly very gripping.[66]

The first warning came from Phoenix, Arizona, on 10 July. Ken Williams, an experienced international terrorism agent wrote a memorandum detailing his suspicions about some suspected Islamic radicals who had been taking flying lessons in Arizona. Williams proposed an investigation to see if al-Qaeda was using flight schools nationwide. He submitted his report to headquarters and two field offices, including New York City. It died in all three locations.[67]

A second warning arrived five weeks later on 13 August, when Zacarias Moussaoui, a Frenchman of Moroccan ancestry arrived at Pan Am International Flight Academy in Minnesota for simulator training on a Boeing 747. He wanted to learn to fly a Boeing 747 in four or five days which raised suspicions. One of the school's instructors contacted the FBI. Moussaoui was subsequently detained the next day. The next two weeks were spent trying to persuade headquarters to allow the field agents authority to search Moussaoui's computer.[68] FBI whistle blower Coleen Rowley revealed that agents at the Minneapolis field office became so frustrated with the inaction of their higher chain of command in regard to their investigation into Moussaoui, the alleged twentieth hijacker, that they attempted to bypass their bosses and alert the CIA's Counter-Terrorism Center. They were subsequently chastised by the FBI hierarchy for going outside channels. Rowley revealed that the resistance to their warnings and pleas for warrants was so great that agents in her office joked that some FBI officials "had to be spies or moles...who were actually working for Osama bin Laden."[69] One agent as a result of the arrest speculated in his notes that Moussaoui "may be planning to fly something into the World Trade Center."[70]

In a parallel development, another of the terrorists, Khalid Al-Midhar, was identified well in advance. In January 2000 a group of al-Qaeda operatives met in Kuala Lumpur, Malaysia, to plot the attack on the USS Cole. The meeting was caught on tape by Malaysian authorities and it was turned over to the CIA. During the summer of 2001, the CIA identified one of the attendees as al-Midhar, a Saudi whom intelligence officials thought entered the US shortly after the Malaysian meeting and left six months later. The CIA put his name on a terrorist watch list and eventually handed it over to Immigration and Naturalization Service, but by then he had already slipped back into the US. Within the next few days the CIA notified the FBI who initiated a frantic manhunt but with no success. On September 11 authorities believe he flew American Airlines Flight 77 into the Pentagon.[71]

In asymmetric warfare, we must try and stay out ahead of potential attackers.

As detrimental as it is to national security, the reason for this apparent unwillingness to cooperate with one another is not difficult to understand. First, it is a question of competition and rivalry. Information is power and perceived success of an organization drive budget allocations, directorships and personnel levels. Second, there is a question of mistrust. Everyone wishes to protect their sources. There is an inherent paradox with key government agencies in the intelligence business. The FBI is reluctant to share information obtained from its informants for fear of compromising future court action. The CIA collects and analyzes information in order to forewarn the government before an act occurs. As a result, the CIA is reluctant to give FBI information for fear that its sources and methods for gaining that information will be revealed in court.[72] The Commission on the Roles and Capabilities of the United States Intelligence Community determined that "there remains a mutual reluctance to share sensitive information" due to the perceived need to "protect intelligence sources and methods."[73] Finally, the last reason for the lack of timely shared intelligence is the sheer inertia of the bureaucracy involved.

But what is important is the fact that bottlenecks for whatever reason, whether it is security or rivalry, make timely action difficult. You just don't know what you don't know. It is difficult to plan any action or mission, preemptive or otherwise if you do not know what information is available that might be useful. "I have often thought," confided President Harry Truman in his 1947 memoirs, "that if there had been something like coordination of information in the government it would have been more difficult, if not impossible, for the Japanese to succeed in the sneak attack at Pearl harbor."[74]

Cooperation, since the tragedy of 9/11 has begun to improve. Many are now looking at the CIA Counter-terrorism Center, which was designed in 1986 as a means to get the FBI and CIA agents working side by side as the model to be emulated. In the past three years it has broken up three planned attacks by the Hizbollah terror group outside of the Middle East. It is now seen as a paragon of interagency cooperation–but represents only 1 percent of the US intelligence community. It has doubled since 9/11 and has received generous new funding.[75]

Clearly, closer integration is a must. What is needed is a national centralized executive intelligence authority that sets priorities for national collection and analysis and has the means and ability to coordinate the efforts of all national security organizations.[76] Simply put, a place that can pull it all together and that has executive authority to enforce its will. Liaison officers are no longer enough. The participating members must have the power to

Lieutenant-Colonel Bernd Horn, CD

reach back into their organizations and direct action to take place. The current American model is indicative of what not to do. The Homeland Security czar, Tom Ridge, has no authority over Cabinet members or agencies and, therefore, no clout–no ability other than persuasion to make things happen.[77] What is essential is for any coordinating body or joint authority to have executive power to determine information priorities and assign collection tasks, as well as coordinate the dissemination of the resultant intelligence to ensure that the myriad of organizations act in a synchronous fashion.

In the wake of 9/11, particularly in light of the numerous allegations of an intelligence failure, cooperation appears to have become a priority. However, it is the long term state that is important, not the immediate reaction. In the Canadian case a series of terrorist incidents in 1985 raised Canadian political consciousness as a result of incidents such as the storming of the Turkish embassy by three Armenian men on 12 March 1985 (Armenian Revolutionary Army); the paralyzation of the Toronto public transit system on 1 April 1985, as a result of a communique sent by a group identifying itself as the Armenian Secret Army for the Liberation of our Homeland in which they threatened death to passengers of the transit system; and the downing of an Air India flight off the coast of Ireland on 23 June 1985, killing 329 people as a result of a bomb that was planted prior to its departure from Toronto's Pearson International Airport.[78] These events were cataclysmic in prompting increased action against terrorism. However, 17 years later, many of the same criticisms in regard to information sharing and inter-agency cooperation still exist.[79]

But, working together is no longer a question of choice. It has become a necessity. "Just one intelligence collection system," explained Former National Security Agency (NSA) director William Studeman, "alone can generate a million inputs per half-hour." He conceded that "We don't come near to processing, analyzing and disseminating the intelligence we collect right now."[80] Among the millions of communication intercepts collected by the NSA on 10 September 2001, were two Arabic-language messages warning of a major event the next day. They were not translated until 12 September.[81]

A CSIS report warns that computers, modems, and the Internet are enhancing the operational capabilities of terrorist organizations.

One needs only look at the daunting scope of the problem. Terrorists or others are capable of utilizing technology to their advantage by using cell phones and e-mail to provide instantaneous global data and money transfers. But due to the "economic importance of technology diffusion in the economic realm, a great deal of effort has been devoted to devising strategies to remove roadblocks to effective technology use in commercial processes and product manufacturing."[82] A CSIS report warns that "computers, modems, and the Internet are enhancing the operational capabilities of terrorist organizations. Terrorists have improved their use of advanced technologies to protect and expedite lines of communication, control and funding both nationally and internationally." The analysis also reveals that this has increased the chances that planning for the next terrorist attack may not be detected. In addition, the CSIS report noted that "Terrorists also have augmented their security through the use of sophisticated encryption software to protect sensitive communications."[83]

This eruption of communication capability creates grave problems. For instance, telephone service has grown approximately 18 percent annually since 1992 and worldwide telephone service has exploded to some 82 billion minutes by 1997.[84] The number of languages used around the world is more than 6,500 many of which are growing. It takes enormous amounts of time to train language analysts, anywhere from three to eight years, to attain the minimum professional capability.[85] In addition, the "rapid evolution of technology relating to computer-based communications and encryption is challenging the capacity of intelligence services around the world to lawfully intercept communications and gather intelligence."[86]

We have come a long way from the traditional Cold War enemy and structures that in retrospect appear much more benign and certainly more predictable and stable. However, the overwhelming superiority–economically, militarily and technologically of the United States and its allies has created a situation where asymmetric warfare is the only viable option for those who see themselves as enemies of the West. As such, the key to winning this new war lies in the sharing of relevant, precise and timely information and having the confidence to act on it. Special Operations Forces can assist in achieving this end state by using that intelligence to disrupt or prevent attacks by hostile forces hoping to use asymmetrical warfare.

ABOUT THE AUTHOR...

Lieutenant-Colonel Bernd Horn is the Commanding Officer of the First Battalion, The Royal Canadian Regiment. He received his BA(Hon) in Political Science from the University of Waterloo and his MA and PhD in War Studies from the Royal Military College (RMC) of Canada. He is an Adjunct Associate Professor of History at RMC, as well as the honorary historian for the Canadian Airborne Forces Museum, 1st Canadian Parachute Battalion Association and the Airborne Regiment Association of Canada.

ENDNOTES

1. Massimo Calabresi and Romesh Ratnesar, "Can we Stop the Next Attack?" *Time*, 11 March 2002, 18.
2. Tom Clancy, *Special Forces* (New York: A Berkley Book, 2001), 3.
3. Britain also began a limited strategic bombing campaign, however, to Prime Minister Churchill and the public this did not have the same appeal as the knowledge that ground forces were wreaking havoc on the enemy.
4. Thomas K. Adams, *US Special Operations Forces in Action. The Challenge of Unconventional Warfare* (London: Frank Cass, 1998), 7.
5. This should not be surprising. "Pure military skill is not enough," declared President John F. Kennedy as early as 1962. He elaborated that "a full spectrum of military, paramilitary and civil action must be combined to produce success. The enemy uses economic and political warfare, propaganda and naked military aggression in an endless combination....Our officers and men must understand and combine the political, economic and civil actions with skilled military efforts." Ibid., 73.
6. US Special Operations Command, *US Special Operations Forces. Posture Statement 2000* (Washington, D.C.: Department of Defense, 2001), 1.
7. General Peter J. Schoomaker, *Special Operations Forces: The Way Ahead*, USSOC, 2000, 7.
8. Schoomaker, Special Operations Forces, 7. "We must," insisted General Schoomaker, "also have the intellectual agility to conceptualize creative, useful solutions to ambiguous problems and provide a coherent set of choices to the CinC or Joint Force Commander—more often like Sun Tzu, less like Clausewitz. This means training and educating people how to think, not just what to think." General Holland insisted that the SOF warrior "is one of our Nation's great assets: superbly trained, physically tough, culturally aware, an independent thinker—a quiet professional." General Charles Holland, USAF, "Quiet Professionals," *Armed Forces Journal International*, February 2002, 26.
9. USSOC, *Posture Statement 2000*, foreword.
10. Ibid., 34.
11. Ibid., 5.
12. "Chapter 11—Special Operations," NATO Publication AJP-1 (A), Third Draft, March 1998, 11-1.
13. Schoomaker, *Special Operations Forces*, 2.
14. USSOC, *Posture Statement 2000*, 2.
15. Colonel W.J. Fulton, DNBCD, "Capabilities Required of DND, Asymmetric Threats and Weapons of Mass Destruction," Fourth Draft, 18 March 01, 17/22.
16. Michael Ware, "On the Mop-Up Patrol," *Time*, 25 March 2002, 36-37; and Thomas E. Ricks, "Troops in Afghanistan to take political role Officials say remaining fights to be taken by Special Forces, CIA," *Duluth News Tribune*, 7 July 2002, 1. The CIA has unleashed its 150 man covert paramilitary force in Afghanistan to conduct sabotage, collect intelligence and train Northern Alliance guerrillas. See Calabresi and Ratnesar, 22.
17. Glenn Goodman, "Tip of the Spear," *Armed Forces Journal International*, June 2002, 35. This number represents 18 Operational Detachment-Alpha—12 man teams. Initially only four SF teams were inserted by helicopter in the north to link up with Northern Alliance commanders in late October and early November when the US backed anti-Taliban offensive appeared to be bogged down.
18. Dr. Elinor Sloan, "Terrorism and the Transformation of US Military Forces," *Canadian Military Journal*, Vol 3, No. 2, Summer 2002.
19. USSOC, *Posture Statement 2000*, 41.
20. Ray Bond, ed., *America's Special Forces* (Miami: Salamander Books, 2001).
21. Kim Burger, "US Special Operations get budget boost," *Jane's Defence Weekly*, Vol 37, No. 8, 20 February 2002, 2.
22. Ibid., 2.
23. Bond, 9. The increase in operational tempo is significant. During 1993 US Special Operations Command averaged 2,036 personnel deployed away from home station each week serving in 101 countries. By 1996 the number had climbed to 4,613. In 1997 SOF deployed to 144 countries around the world with an average of 4,760 SOF personnel deployed per week–threefold increase since 1991. In addition, in 1997 American SOF conducted 17 crisis response operations, 194 counter drug missions, and humanitarian demining operations in 11 countries. Also participated in 224 combined exercises for training in 91 countries.
24. Commission on the Roles and Capabilities of the United States Intelligence Community, *Preparing for the 21st Century. An Appraisal of US Intelligence*, 1 March 1996, B-1. Present roles of DND are: to provide strategic level intelligence within its approved collection mandate and to provide operational and tactical intelligence, surveillance, target acquisition and reconnaissance, within its approved collection mandate. Fulton, 2/22.
25. "Chapter 11—Special Operations," NATO Publication AJP-1 (A), Third Draft, March 1998, 11-5.
26. Peter Harclerode, *Secret Soldiers. Special Forces in the War Against Terrorism* (London: Cassel & Co, 2000), 289-291. In addition, in 1976, initial planning for the Entebbe operation included four options. The first three variations depended on the cooperation of the Ugandans for a successful withdrawal once the Israeli Special Operations Forces had rescued the hostages. However, once Mossad produced information that indicated that Idi Amin was heavily involved in aiding the terrorists, detailed planning could begin on the fourth option–raid Entebbe airport and carry out rescue operation and withdraw to friendly territory.
27. "Ambush in Mogadishu–Interview with General Thomas Montgomery," *Frontline*, http://www.pbs.org/wgbh/pages/frontline/shows/ambush/interview/montgomery.html, accessed 9 July 2002.
28. Calabresi and Ratnesar, 22.
29. Jonathan Weisman, "CIA, Pentagon Feuding Complicates War Effort," *USA Today*, 17 June 2002, A11.
30. Steven Metz and Douglas V. Johnson II, "Asymmetry and US military Strategy: Definition, Background, and Strategic Concepts," US Army War College, Strategic Studies Institute, January 2001, 5-6.
31. Fulton, 2/22.
32. A DND report acknowledged that factors affecting the asymmetric threat are not adequately covered by intelligence—these include the analysis of behavioural and cultural issues influencing future threats, developments in technology and medicine, advances in bioengineering and potential agricultural biological warfare agents and the threat from the deliberate release of toxic industrial hazards. Fulton, 7/22. Intelligence requirements include: Organization—its size and composition of the group; Motivation—long and short-term goals; Religious, political, ethnic affiliations; Support network—moral, physical and financial (national and international); Group leaders and their planning capability; Degree of discipline and collective skills / capability; Tactics and past operations (willingness to kill); Willingness for self-sacrifice; and available equipment and technology.
33. Donna Winslow, *The Canadian Airborne Regiment in Somalia*. A Socio-cultural Inquiry (Ottawa: Commission of Inquiry into the Deployment of Canadian Forces to Somalia, 1997), 126-133. Scholars and military analysts have long decried the problems with elite organizations, specifically their failure to adhere to normal military discipline and protocol. Roger Beaumont, described elites as "virtually encapsulated delinquency." Retired Canadian Forces Lieutenant-Colonel, Dr. Charles Cotton of Queens University, in his studies of military culture, especially Canada's, concluded, "their [elites] cohesive spirit is a threat to the chain of command and wider cohesion." Cohen reported that "an almost universally observed characteristic of elite units is their lack of formal discipline—and sometimes a lack of substantive discipline as well."
34. Clancy, *Special Forces*, 281.
35. William H. McRaven, *Spec Ops. Case Studies in Special Operations Warfare: Theory and Practice* (Novato, CA: Presidio), 3.
36. Presentation "Continuity and Change in Global Terrorism," by Stephen Sloan at the Terrorism, Asymmetric Warfare and Homeland Security Conference at University of New Brunswick, 4 October 2002.
37. Albert Einstein "Great Quotes in Time,"

http://home.clear.net.nz/pages/juni0r/quotes.html, accessed 8/21/2002.
38. Qiao Liang and Wang Xiangsui, *Unrestricted Warfare* (Beijing: PLA Literature and Arts Publishing House, February 1999), 182.
39. Ibid., 183.
40. Metz and Johnson II, 15.
41. Stewart Bell, "Cyber-Attacks threaten Canada," *National Post*, 18 July 2002, A4. As told to USA Today.
42. Harclerode, 346.
43. Ibid., 511.
44. Michael Elliot, "How the US Missed The Clues," *Time*, 27 May 2002, 22.
45. Ibid., 22 and Michael Hirsh and Michael Isikoff, "What Went Wrong," *Newsweek*, 27 May 2002, 30.
46. Hirsh and Isikoff, 31.
47. Ibid., 31.
48. Elliot, "How the US Missed The Clues," 22. The G-8 summit in Genoa, Italy, 20 July 2001 prompted fears of an al-Qaeda plot to kill President Bush . As a result frogmen were placed in the harbor, the airspace around the town was closed and it was ringed with anti-aircraft guns. See Michael Elliot, "They Had a Plan," *Time*, 12 August 2002, 34.
49. Hirsh and Isikoff, 33.
50. Robert Hall and Carl Fox, "Intelligence Failings & Structural Reform," *Intersec*, Vol 11, Issue 11/12, Nov/Dec 2001, 351.
51. Brian MacDonald, *Terror. Proceedings Spring 1986* (Toronto: The Canadian Strategic Institute of Strategic Studies, 1986), 138-139.
52. Mike Kelly, "Evolving Terrorist Threats," Presentation at RMC SOF Symposium, 7 March 2002.
53. Confidential correspondence, 21 August 2001.
54. William Kelly, Chair. *The Report of the Special Senate Committee on Security and Intelligence* (Ottawa: Canada, January 1999), 62. During the FLQ Crisis in October 1970, the failure to preempt kidnaping and killing, even though early warning was present, was attributed to a failure of intelligence. Although key individuals who took part in the crisis were under surveillance and despite the fact that the security service was aware of FLQ activities such as planned kidnap plots–the FLQ achieved surprise. This was a result of the lack of cooperation, as well as the lack of HUMINT sources and analytical expertise on the part of all three police forces. MacDonald, 64. RCMP distrust of the Provincial Police compounded problems arising from the jurisdictional conflicts. RCMP felt it had reason to believe that the FLQ or its sympathizers had penetrated the QPF and thus could not be trusted.
55. Canada. *Canadian Security and Military Preparedness. Report of the Standing Senate Committee on National Security and Defence*, February 2002, 53. Professor Wark paints a negative picture of co-ordination and co-operation among the various Canadian intelligence agencies. He compared them to a set of separate intelligence silos, co-ordinated largely by the PCO. He argues that Canada needs a new organization to merge the silos into one. Richard Fadden, Deputy Clerk, Counsel and Security, Intelligence Coordinator, PCO outlined four security / intelligence communities in Canada: a. Foreign Intelligence—focused on capabilities, activities and intentions of foreign states, organizations and individuals with an impact on vital Canadian interests. The CSE works exclusively in Foreign Intelligence but DND, DFAIT and the CSIS also contribute; b. Security Intelligence—is focused on activities that might threaten Canadian security—terrorism, espionage, etc. The Solicitor General through CSIS has greatest responsibility, but DND, DFAIT as well as RCMP are also involved; c. Military Intelligence—the tactical and strategic capabilities and intentions of foreign states and organizations—primarily DND but DFAIT and SolGen also contribute; and d. Criminal Intelligence—information about criminals and criminal organizations, how and why they commit crime. Basic responsibility of the SolGen through RCMP and CSIS.
56. Clancy, *Special Forces*, 281. He noted that "one of the most powerful sources of friction [for SOF] is the system for delivery of intelligence agencies to its military customers."
57. Commission on the Roles and Capabilities of the United States Intelligence Community, *Preparing for the 21st Century. An Appraisal of US Intelligence*, 1 March 1996, xii.
58. Harclerode, 459.
59. Elliot, "They Had a Plan," 34.
60. Elliot, "How the US Missed The Clues," 25.
61. Calabresi and Ratnesar, 20.
62. Ibid., 20.
63. "Rumsfeld Calls for Better Military Intelligence," *The Augusta Chronicle*, 8 July 2002, A3.
64. Elliot, "They Had a Plan," 25.
65. Ibid., 33.
66. Ibid., 33. See also Hirsh and Isikoff, 32; Romesh Ratnesar and Michael Weisskopf, "How the FBI Blew the Case," *Time*,3 June 2002, 21; and Michael Isikoff and Daniel Klaidman, "The Hijackers We Let Escape," *Newsweek*, 10 June 2002, 20-28.
67. Elliot, "They Had a Plan," 35. See also Elliot, "How the US Missed The Clues," 23; Hirsh and Isikoff, 30; and Ratnesar and Weisskopf.
68. Elliot, "They Had a Plan," 36.
69. Ratnesar and Weisskopf, 21.
70. Hirsh and Isikoff, 33-34.
71. Elliot, "They Had a Plan,""36.
72. John Deutch and Jeffrey H. Smith, "Smarter Intelligence," *Foreign Policy*, January / February 2002, 64.
73. *Preparing for the 21st Century*, 41. At present CIA, NSA, DIA, FBI and Drug Enforcement Administration all have separate agreements with foreign counterpart organizations to get information. Deutch and H. Smith, 65. CSIS analyst Paul de B. Taillon wrote that "Compromise of sources and information, fear of third-party links, and the general frustration of highly threatened governments, with what they perceive as insufficient activity of generally allied, but less threatened, states, all lead to lesser cooperation in counter-terrorism than in other spheres." J. Paul de B. Taillon, *The Evolution of Special Forces in Counter-Terrorism* (London: Praeger, 2001), 138.
74. Deutch and Smith, 67.
75. Calabresi and Ratnesar, 22.
76. Brigadier-General David Jurkowski, former Chief of Staff for Joint Operations stated this requirement to the Standing Senate Committee on National Security and Defence in 2001. See The Standing Senate Committee on National Security and Defence, *Canadian Security and Military Preparedness*, February 2002, Part I, Item 14. One positive example is the Canadian Forces Network Operations Centre (CFNOC) which was operational as of 3 September 2002, to "better focus national network situational awareness and security." Its mission is to "fight the networks" and give NDHQ Joint Staff and DND / CF leadership full DND / CF network situational awareness. DND, CANFORGEN 090/02 ADM IM 006/02, 281315Z Aug 02.
77. Calabresi and Ratnesar, 23. See also "How Safe Now?" *Time*, 27 May 2002, 27. An administration official commenting on the splintered intelligence structure lamented "We don't have a place where it all comes together." One example of the problem is the NSA and its 68 separate e-mail systems where it is virtually impossible to send an e-mail message to all of the agency's 38,000 employees. James Bamford, *Body of Secrets. Anatomy of the Ultra-Secret National Security Agency* (New York: Random House, 2002), 648.
78. MacDonald, 49.
79. It is interesting to note that as long ago as 14 May 1984, Robert Kaplan, then the Solicitor General of Canada declared that every terrorist group in the world "develops their activities and their support for what they're doing in Canada." MacDonald, 52.
80. Bamford, 647.
81. Associated Press, "US Upgrades Snooping Abilities," http://rtnews.globetechnology.com, accessed 2 October 2002.
82. Brian A. Jackson, "Technology Acquisition by Terrorist Groups: Threat Assessment Informed by Lessons from Private Sector Technology Adoption," *Studies in Conflict & Terrorism*, 24:2001, 205.
83. Canada. *Canadian Security Intelligence Service 2000 Public Report* (Ottawa: CSIS, 2001), 8.
84. Bamford, 648
85. Ibid., 649.
86. *Canadian Security Intelligence Service 2000 Public Report*, 6.

Jomini on Battlefield Tactics

by Lieutenant Vincent J. Curtis, CD

INTRODUCTION

Baron Antoine Henri de Jomini was born in a French speaking Canton in Switzerland in 1779. The son of middle-class parents, Jomini's education enabled him to enter the banking profession in Paris before he joined the French army, in 1797, at the age of seventeen. Jomini began his long military career in a minor staff position in supply. During the Peace of Amiens between 1801 and 1803, Jomini wrote a treatise on the campaigns of Frederick the Great. Napoleon was impressed by the work, and he appointed Jomini to the Imperial Staff under its famous Chief, Louis-Alexandre Berthier. Jomini and Berthier feuded viciously, and rather than lose his services, Jomini was assigned other staff jobs by Napoleon, who valued talent and who saw Jomini's worth. By 1813, Jomini was *general de brigade* and was Marshal Michel Ney's chief of staff. After the Battle of Bautzen in 1813, Ney put him in for promotion to *general de division*. Berthier, however, had other ideas. Fearing intrigue, Jomini, still a Swiss citizen, abandoned the Grande Armée and entered the Imperial Russian service. Eventually, Jomini rose to the rank of full general in the Imperial Russian army. Jomini died in Paris in 1869, aged 90, having outlived all his contemporaries and enjoying the reputation of being a leading expert in warfare throughout his life.

Jomini was a prolific writer throughout his life. His *The Art of War*, first published in 1838, is the pinnacle of his works. Its contents represent the mature expression of the doctrine and theory that he distilled from close observation of the Napoleonic method. Clausewitz and Jomini were contemporaries, and both held high staff positions throughout the wars of Napoleon. Each regarded the other with contempt, though what they said about war is similar. Clausewitz, imbued with Kantian philosophy, wrote for kings, governments, ministers of war, and commanders in chief. Jomini, a failed Cartesian rationalist, wrote what amounts to a handbook for commanders and staff officers. Doubtless, Jomini's philosophical pretensions irritated Clausewitz to no end, and Jomini returned the contempt. During his long life, Jomini enjoyed much the higher reputation. After the success of Prussian arms in the Austro-Prussian War of 1866 and the Franco-Prussian War of 1870, however, the star of Clausewitz rose and entirely eclipsed that of Jomini.

To both Clausewitz and Jomini, the lesson of Napoleon was to concentrate the maximum possible force upon the decisive point. On the tactical plane, Jomini was ambivalent about whether the "decisive point" referred to a geographical point or to a point in the enemy's formation—whether the possession of a certain geographical feature or a point in the enemy's formation constituted the proximate cause of victory. It could be either, for to Jomini, the tactical value of ground arose not merely from the accidental features of the terrain but from the formation in which the enemy defended the ground and from the relationship of the defended position to the enemy's line of withdrawal. Jomini clearly believed that the destruction of all or part of the enemy's army was essential to victory, and terrain assumed tactical significance if the seizure of a key feature would split the enemy force into non-cohesive smaller units, threaten the enemy's line of withdrawal, force the dislodgement of the enemy's line, or give some other overwhelming advantage that would ensure the defeat and destruction of the enemy. In this sense, terrain was something of an aiming point, the capture of which, both sides recognized as deciding the outcome of the battle. Jomini did not conceive that the ideal object of battle was the annihilation of the enemy, as Clausewitz did. In the simple line drawings reproduced below, Jomini presents battle formations independent of terrain and explains the geometric advantages and disadvantages of these formations in defence and offense in a highly conceptual way. The battle formation that is most suitable for defending or attacking a particular position depends upon the topography of the ground, the formation assumed by the enemy, and the location and direction of the lines of communication.

doubtless, Jomini's philosophical pretensions irritated Clausewitz to no end

These diagrams were drawn by Jomini to illustrate in a general way the most common and sensible battle formations and were never intended to represent a rigid formalism. In his accompanying comments, Jomini warns that his diagrams should not be understood to mean that the tactical formations should be laid out precisely as the geometrical figures indicate them. He wrote that a general who would expect to arrange his line of battle as regularly as upon paper or on a drill-ground would be greatly mistaken and would likely suffer defeat. But he goes on to say that "if it seems absurd … to mark out upon the ground an order of

battle in such regular lines as would be used in tracing them on a sketch, a skillful general may nevertheless bear in mind the orders which have been indicated, and may so combine his troops on the battlefield that the arrangement shall be similar to one of them."[1]

Even in this age of manoeuvre warfare, opposing forces attack and defend in some formation or other. Of necessity, these formations bear some geometric relationship with respect to each other. Recognition of the formations and an understanding of the geometric relationships can aid the commander in planning his battle and help the subordinate commander picture in his mind the commander's plan.

All wisdom is not new wisdom; if what was true in 1838 is true today, then it will quite likely also be true in 2032 and beyond because the timelessness of the tactical insight is based upon some unchanging fundamental principle. The object of reading Jomini's work is to help perceive the "art" in *The Art of War* and to develop a rational basis for the discussion of the advantages and risks of different combat formations. While Jomini's diagrams were originally meant to refer to battalions, brigades, divisions, and corps, they are offered here because, with the open formations employed today, they can equally apply to elements smaller than a battalion. Included also are Jomini's comments on tactics in general, the truths of which sound familiar or commonplace today. This bespeaks of a permanent, fundamental principle that underlie these insights and may confirm in the mind of the commander the validity and general application of his own experience.

Jomini's *The Art of War* was translated into English under the auspices of United States Military Academy at West Point in 1862. The translation retains much of Jomini's florid writing style, a style that was also much in vogue in the English-speaking world at that time. Jomini's thoughts on battlefield tactics are paraphrased here in modern syntax so that the reader can more easily absorb them. These ideas have been amplified with more recent examples. The difference between the amplifications and ideas translated directly from Jomini should be clear from the context.

the object of reading Jomini's work is to help perceive the "art" in The Art of War

"ORDERS OF BATTLE"

Article XXXI of Jomini's *The Art of War* covers what he calls the orders of battle. It is perhaps more descriptive to call them geometric configurations of forces, but the term "geometric" was discredited at the time he wrote, and Jomini was sensitive to criticism. A commander, of necessity, must choose some order of battle or other in which to fight, and Jomini enumerates twelve such orders of battle. Jomini warns, however, that even choosing the most appropriate order or formation is by no means a guarantee of tactical success, for "the great difficulty of the tactics of battles is and always will be the simultaneous entering into action of the numerous fractions whose efforts must combine to make an attack successful." That is, to get all one's forces to unite in the execution of the decisive manoeuvre which is to result in victory. Today, we use the verb synchronize to indicate this concept.

The aim of every battle is, of course, victory. To Jomini's thinking, the proximate cause of victory is the obtaining of the object of the battle. For example, dislodging an enemy from his position and cutting the enemy's line are objects of an offensive battle that, if attained, should result in victory. (Jomini implicitly assumes that the attacker is able to maintain the initiative after gaining the object and is able to beat off enemy counter-attacks.) An enemy is dislodged either by overthrowing him at some point of his line or by outflanking him so as to take him in flank and rear or by using both these methods at once. That is, attacking him in front while at the same time one wing is enveloped and his line turned. This object is accomplished by means of the order of battle most suited to the terrain and the battle order of the enemy.

Jomini lists his twelve orders of battle as follows:

- the simple parallel order;
- the parallel order with a defensive or offensive crotchet;
- the order reinforced upon one or both wings;
- the order reinforced in the centre;
- the simple oblique order, or the oblique reinforced on the attacking wing; the perpendicular order on one
- or both
- wings;
- the concave order;
- the convex order;
- the order by echelon on one or both wings;
- the order by echelon on the centre;
- the order resulting from a strong combined attack upon the centre and one extremity simultaneously.

These orders are listed in figures 1 through 12. Jomini states that each of these orders may be used either alone or in connection with the manoeuvre of a strong column intended to turn the enemy's line.

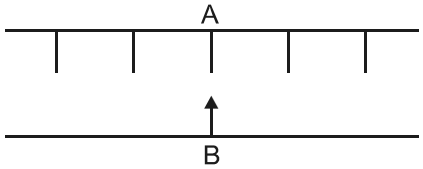


Figure 1

Figure 1 shows the geometric arrangement of the parallel order. Jomini describes it as the worst of all arrangements because it requires no skill to fight one line against another, battalion against battalion, with equal chance of success on either

side. No general's skill is shown in such a battle. Jomini does say that the parallel order is suitable when falling upon the enemy's communications and cutting off his line of retreat while covering one's own; that army which has reached the rear of the other may use the parallel order, for, having effected the decisive manoeuvre, all its efforts should be directed toward the frustration of the enemy's endeavor to open a way through for himself. (It should be noted that barring the door of retreat to a desperate enemy places one tactically on the defensive.) Except for pursuit, the parallel configuration is never suitable for advancing in the attack.

Such criticism by Jomini is certainly valid when both sides are equal in armament, and in his day they were. Smoothbore artillery and muzzle loading muskets were then the common armament of all European powers. This is what he meant in the comment "with equal chance on either side." This is not to say that decisive victory is impossible when attacking parallel line against line. Indeed, there are numerous historical examples to the contrary. In these cases, one can almost always discover some superiority in morale, training, or weaponry on the side of the victor. If one side is equipped with vastly superior weapons to the other, a line-against-line battle is possibly the simplest way for the stronger to destroy the weaker while keeping down the cost of the butcher's bill to oneself. Historical examples of this include rifled barrel muskets versus sabers (Balaklava, 1854), bolt action rifles versus muskets (Sadowa, 1866), machine-guns versus single shot, black powder rifles (Omdurman, 1896), and, more recently, smart weapons against conventional armaments (Gulf War, 1991). Possession by one side of the initiative can also give advantage to the parallel formation as, for example, in an ambush or when attacking a withdrawing enemy that is trying to escape pursuit. Withal, the parallel order, representing one line facing another, is at some point almost unavoidable.

Figure 2 represents the parallelorder with a crochet upon a flank. This configuration is often used in the defence, when the defender tries to catch the attacker in

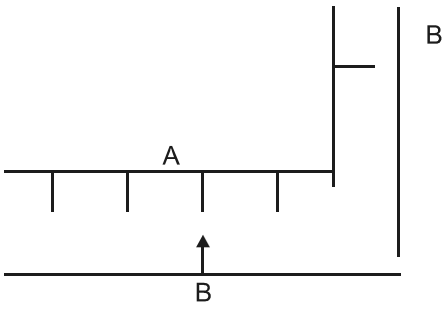


Figure 2

crossfire. It can also arise when the attacking side attempts to turn the flank of the defender. The line and the crochet of position A is vulnerable to enfilading fire from positions in B.

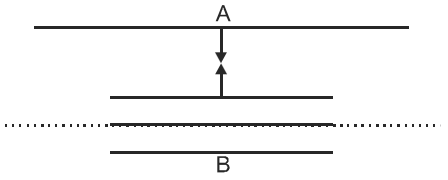
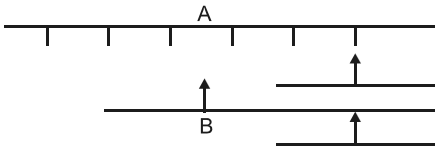


Figure 3

The formation of B in figures 3 and 4 represents the parallel order reinforced upon the centre or upon one wing. As attacking formations, these are much more favorable to the simple parallel order. Figure 3, in fact, conveys the sense of the classic case of line versus column. In Jomini's day, each line represented battalions of infantry armed with muzzle loading muskets. Today it is perhaps more apt to think of these lines as representing force. Thus Figure 3 represents an attempt by B to force the centre of A's position, while Figure 4 represents B's attempt to force the wing. Students of manoeuvre warfare would discern a main effort, or a *schwerpunkt*, in B's attack on A.

The weakness of B's attack in Figure 3 is that the wings of A's line are inclined to fold inwards to fire at the flanks of the attacking column. Being in line, A is able to direct all its fire at B, while the interior of B's formation is unable to return fire. The decision of the encounter is rendered by the greater of the steadiness of A or the impulse of B.

Figure 4



Jomini did not comment upon the position of B in Figure 3 as a defensive formation, but as a defensive formation, the arrangement of B indicates a defence in depth. In a memorandum to a Crown Prince, Clausewitz recommended fighting defensively with the troops deeply echeloned behind an obstacle.[3] The arrangement of B in Figure 3 represents just such a configuration. It is easy to see why a defence in depth is so hard to break when attacked directly. The flanks of each defensive line are protected from assault by the line of defence behind it, and the next line of defence is well positioned to counter-attack against a successful enemy frontal assault of the line in front of it or at least to present yet another line of resistance to the attacker. It is also easy to see the weakness of this defensive configuration. The formation, because of its compactness, can be encircled or turned out of its position by a strategic march around it. The only tactical alternative to a bloody reduction of B's position, distinct from a strategic envelopment manoeuvre, is for A to retire and try to lure B out of his position and break his formation.

In World War I, both sides assumed the configuration of B in Figure 3. With the flanks of both sides secured by the English Channel and the Swiss frontier, fighting degenerated into bloody, unsuccessful frontal assaults. With the tank, the Allies attempted to use superior weaponry to smash the German lines. In 1918, the Germans attempted micro-infiltration tactics to break each Allied line successively from within. Given how deeply the Germans had penetrated into France, and the military culture of the allies, one can understand why the Allies never tried a tactical (or operational) retirement manoeuvre. It is something of a wonder, however,

Lieutenant Vincent J. Curtis, CD

that the Germans, with their tradition of manoeuvre, never attempted one. When the Canadian Corps broke the Hindenburg Line in 1918 and started a large-scale advance, they left the French railways behind. Troops went hungry because supplies couldn't reach them. Fortunately for the Allies, the German army was so weak from four years of war and from the allied blockade that it was in no condition to turn, attack, and perhaps catch the advancing Allies in a trap in the open field.

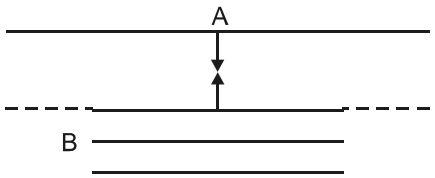


Figure 3A

Let us now return to the case of Figure 3 when B is the attacker. If B is able to extend his front line to cover that of A (as shown in Figure 3A), the weakness of B obvious in Figure 3 is to some extent overcome. The flanks of the main effort are covered. Moreover, the location of the main effort is hidden from A because all that A can see is the continuous front of B. A defensive posture by those elements of B not part of the main effort may not be as conducive to success as offensive actions might be, for A would be mystified as to the location of the main effort if B attacked all across the line. Those elements of B not part of the main effort would fix elements of A by feint, demonstration, outright attack, or simple advance. The more aggressive the effort by those elements of B not of the main effort, the longer A would be mystified and less able to shift reserves. If A *had* detected the location of the main effort before battle commenced and had shifted reserves to meet it, aggressive action by B all along the line might find a gap or weakness in A's line (i.e., surfaces and gaps) to which the main effort could be shifted if the original attack bogged down. This analysis shows the importance of aggressive action by all elements in the attack, even by those elements not in the original main effort. Aggressiveness does have risks, however, as explained below.

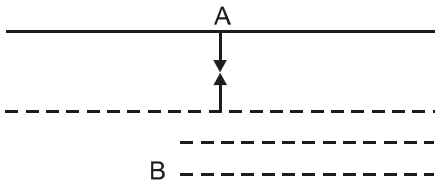


Figure 4A

Figure 4A shows also the continuous front of Figure 3A, but with the main effort shifted to a wing. It becomes clear from figures 4 and 4A that with the main effort on one wing, the opposite wing, farthest away from reinforcement, is vulnerable. If A can bring B's attack on the wing to a standstill, a counter-attack in the centre would pierce B's position, and a counter-attack on the opposite wing would threaten to turn B's entire position. If those elements of B's line that were to meet A's counter-attack were well entrenched in defensive positions instead of having advanced against A's line, they would better able to slow down A's counter-attack and give time to B to shift reserves or to cover B's withdrawal of the main part of his force.

This vulnerability of the far flank does not arise if the attacking force assumes the configuration shown in Figure 5. The oblique order, represented by B's formation, was made famous by Fredrick the Great and was responsible for his spectacular victory in the Battle of Leuthen (1757). By refusing the far wing, the weakness of B's line can be turned into a strength. Frederick recognized the oblique order was the best one in which his force, inferior in numbers, could attack a superior force. In addition to bringing the main effort against a single point of A's line, the oblique configuration enables the refused wing to stand on the defensive, hold part of B's line against a potential attack by A, and act as a reserve, if necessary, for the support for the engaged wing, which it could not do if the line were parallel. If B's attack fails and B is forced to withdraw, the refused wing is well positioned to act as a covering force. Frederick's victory at Leuthen was made possible by his skillful use of intervening high ground to hide his movement and the fact that his sharp manoeuvre to the Austrian left flank was not detected by the Austrians until Fredrick's army burst upon them. The Austrians were drawn up expecting Frederick to come over the ridge to their front. By the time they realized what was happening, their flank was turned, their line was collapsing, and Frederick's forces were threatening the Austrian route of withdrawal.

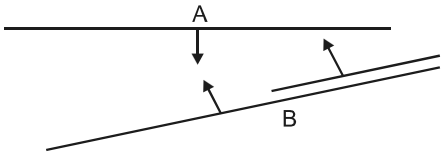


Figure 5

It is obvious from the geometric arrangement of forces, that the right of B's line must overlap the left of A's line. This means that when the forces collide, the extreme left of A's line is already taken in flank and rear. A's line simply collapses as B's advances. If B's line does not overlap that of A, at the collision the extreme right of B's line is taken in flank and it is B's line that is ground up with every move forward. Of course, if the lines of A and B are not parallel, of necessity they must be oblique to each other. The angle between the lines must be sufficient for the geometric advantage to become effective. In practice, a 45° to 60° angle at the point of collision is necessary.

Figures 6 and 7 illustrate the perpendicular order on one or both wings, an angle of attack of 90°. Jomini did not believe that these orders represented a realistic battle arrangement. He believed that they could only indicate the direction along which the primary tactical movement might be made. Two forces would never long occupy the relative perpendicular positions, for if B were to take its first position on a line perpendicular to one or both extremities of A, the latter would at once change the front of a portion of its line. Even B, as soon as it extended itself to or beyond the

extremity of A, must of necessity turn its columns either to the right or the left in order to bring them near the

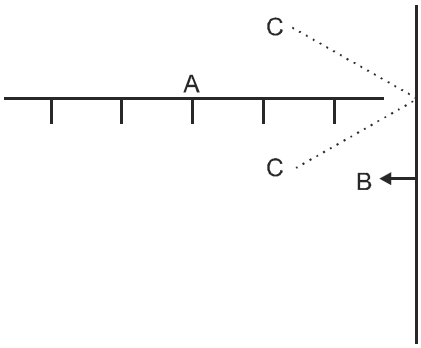


Figure 6

enemy's line, and so take A in reverse as at C, the result being two oblique lines.

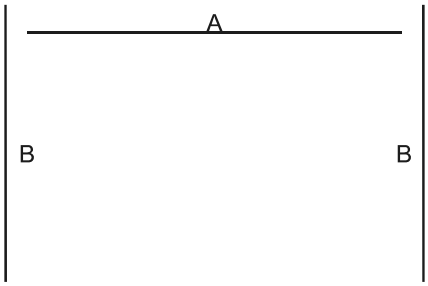


Figure 7

Today, we recognize the configuration in figure 6 as that of a standard flanking attack against a line, a platoon against a section or a company against a platoon. The weakness of this arrangement for the attacker is that the same part of the attacking line encounters all the force of the defence, now oriented in depth against the attack. If A's line is well entrenched, its resisting power may prove considerable. In this case, the assault would have to be made in depth; the individual positions of resistance of A's line would have to be reduced systematically, or an oblique order would have to be assumed, just as Jomini says of the configuration at C. This analysis shows why faster, less costly results are often achieved not by rolling up the flank of A's position but by penetrating A's depth and cracking his resistance by threatening his rear and line of withdrawal, precisely as General Hans von Seeckt and the manoeuvre warfare school would advise.

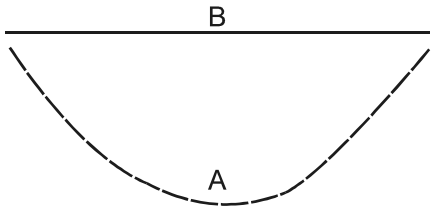


Figure 8

Figure 8 illustrates the order concave in the centre. It is an intermediate position in the manoeuvre used by Hannibal to gain the battle of Cannae (216 BC). Jomini observes that this order may be suitable when the progress of battle itself gives rise to it: when the enemy attacks the centre, it retires before him, and he is enveloped by the wings of the defender, precisely as happened at Cannae. If this order is adopted before the battle begins (and this configuration does resemble that of a fire sack), instead of falling on the centre, the enemy has only to attack the wings, which present their extremities and are in precisely the same relative situation as if they had been assailed in flank. Jomini observes that this configuration would scarcely ever be used except against an enemy that had assumed the convex order (Figure 9).

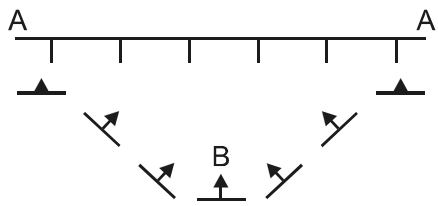


Figure 8A

Rather than form a semi-circle, a defending force would prefer a broken line with the centre retired (Figure 8A). This formation does not present a flank to the attack, but it does allow for forward movement by echelon and preserves concentration of fire. These advantages are still lost if the enemy concentrates its effort on one wing. As an attacking formation, the broken line configuration resembles that of a convergent attack. It also arises from the standard manoeuvre warfare tactic of turning an enemy into the depth of one's position before destroying him in a prepared ambush.

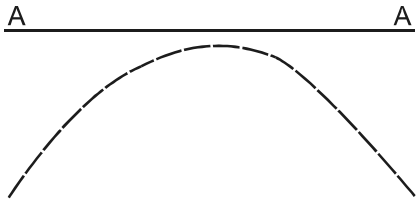


Figure 9

Figure 9 represents the convex order, which is often adopted by a force immediately upon the passage of a river, when the wings must be retired and rested on the river to cover the bridges or when a defensive battle is to be fought with a river in rear or when a defile is to be

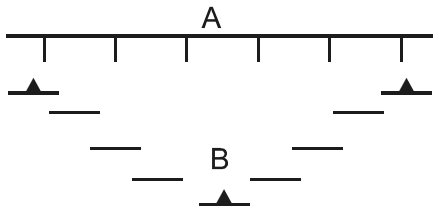


Figure 10

covered. It is thought to be the original order assumed by Hannibal at the commencement of Cannae. The order may be assumed by a force protecting a reserved demolition. It might also be assumed by the defender confronted by a convergent attack, as in Figure 8. Groupings as small as a section assume this formation after crossing an obstacle. The weakness of this formation lies at the extremities of the wings. Jomini recommends a false attack to engage the centre and a strong attack against one extremity as the best method to collapse such a line.

Jomini describes the formation of Figure 10 as order by echelon upon the two wings and Figure 11 as order by echelon on the centre. For Jomini, order by echelon upon two wings (Figure 10) is of the same nature as the perpendicular order (Figure 6) but better because the echelons being nearest each other in the direction where the reserve would be placed, the enemy would be less able, both as regards room and time, to throw himself into the interval of the centre and make at that point a threatening counterattack. (In other words, it would be difficult for A to attack or

counter-attack in the centre of B's position because A would be caught in crossfire. Compare this configuration with that of Figure 3, and imagine A's line in Figure 3 folded inwards towards the flanks of B.)

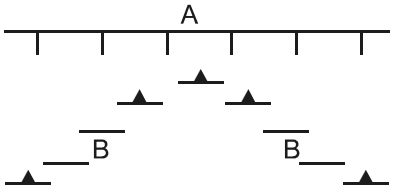


Figure 11

The order of echelon on the centre (Figure 11) may be used against a force occupying a position too much cut up and too extended because, its centre being then somewhat isolated from the wings and liable to overthrow, the force thus cut in two would be probably destroyed. But this order of attack would appear to be less certain of success against a force having a connected and closed line; for the reserve being generally near the centre, and the wings being able to act either by concentrating their fire or by moving against the foremost echelons, might readily repulse them. If the wings of the attacked line are brought at a proper time against the flanks of the foremost echelons, disagreeable consequences might result.

We recognize today in the order of B in Figure 11 the formation used by the vanguard in an advance to contact. A force "cut up and too extended" accurately describes the condition of a covering force, and the configuration of Figure 11 is used by a vanguard precisely because it easily pierces the centre of the covering force's "line" while protecting the flanks of the attacking echelon. The order of B in Figure 10 resembles the interior of a two-up and one-back formation. As Jomini says, a small enemy force caught between the wings of the advancing formation would be quickly surrounded and destroyed in a crossfire. In an advance to contact, an isolated enemy post that resists one of the wings can be easily outflanked and surrounded by the other wing. Jomini's analysis holds as true today as it did in the 19th century.

As defensive formations, the echelon configurations offer a way to surprise the attacker. If a forward echelon of B in Figure 11 is attacked in flank, the echelon behind the attacked echelon can itself take the attacking line in flank with enfilading fire or assault. The position of B in Figure 10 might be assumed to defend a re-entrant. Camouflage, however, is essential for success because the defensive force B is not well positioned to counter-attack and threaten the rear of A, if A were to manoeuvre to concentrate its effort against one wing. If A recognizes the shape and location of the defence, he can avoid the echelon traps, concentrate against one wing, and penetrate the formation.

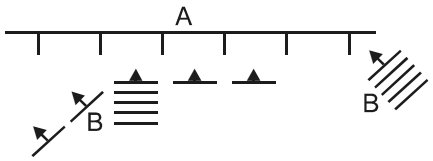


Figure 12

Jomini describes the formation of B in Figure 12 as the order of attack in columns on the centre and on one extremity at the same time and asserts that this formation is useful in an attack upon an enemy's line strongly arranged and well connected—in other words, a tough, compact, defensive position. Jomini believed it to be the "most reasonable of all the orders of battle," though to modern eyes, it presents the picture of two main efforts. The attacks upon the centre and by a wing outflanking the enemy prevent the assailed party from turning upon the assailant and taking him in flank. The enemy's wing is hemmed in between the attacks on the centre and at the extremity and has to contend with nearly the entire opposing force. This was the manoeuvre that gave Napoleon victories at Wagram (July 1813) and Ligny (16 June 1815), and was what he attempted at Borodino (Sept 1812). Napoleon also used it at Bautzen. We find its echo today in the convergent attack along two axes against a single objective, which can be attempted by a force as small as company. This "most reasonable" of battle orders also resembles a platoon flanking attack, in which the support section attacks the centre of the enemy position with fire and the manoeuvre sections assault from a flank.

Jomini had general advice to give on tactics, the truths of which sound familiar today. He declared that the simpler a decisive manoeuvre is, the surer of success it will be. Sudden manoeuvres seasonably executed during an engagement are more likely to succeed than those determined upon in advance. Manoeuvres relating to previous strategic movements, which bring the columns that are to decide the day to those points where their presence will secure the expected result, have also proved successful, as at Waterloo and Bautzen.

Simplicity and speed of execution are well recognized today as essential elements to tactical success. The comment about Waterloo would translate today to fighting an opponent to a standstill with a portion of one's forces, while the rest of it makes a decisive manoeuvre against a flank or the rear of the enemy in conformance with a predetermined plan. A manoeuvrist would use a term like "fixing" or "pinning," while the mobile element gains the decision by breaking into the enemy's rear. The outcome on the battlefield is, in that case, not decisive because the decision is to be gained by a strategic (or operational) move rather than a tactical one.

Jomini advises that, in all his combinations, whether deliberately arranged or adopted on the spur of the moment, the general should endeavor to decide what is the important point of the battlefield. This the general can only do by observing well the direction of the enemy's line of battle, and not forgetting the direction in which strategy requires him to operate. He will then focus his attention and efforts upon this point, using a third of his force to keep the enemy in check or watch his movements, while

throwing the other two-thirds upon the point that, the possession of which, will ensure him the victory. (Here, Jomini's ambivalence between enemy and terrain is plain. In this passage, the proximate cause of victory is the occupation of what we would call today vital ground, combined with maintaining the initiative. What ground is vital depends upon the topography, the orientation of the enemy's battle line with respect to his line of

absent in Jomini's work is the concept of annihilation that is so dominant in the thinking of Clausewitz....

communication, and the enemy's battle order. Against the enemy's battle order, one third of one's own force is used to pin the enemy and the remaining two thirds comprise the main effort against the decisive point.)

In addition to the geometrical drawings, Jomini laid down the following rules as essential for fighting battles in a "scientific manner":

- An offensive order of battle should have as its object to force the enemy from his position by all reasonable means. (Nowadays, under the influence of Clausewitz and Schlieffen, the driving of the enemy from his position would produce merely "an ordinary victory" even if the victory were followed by a pursuit. Schlieffen would attempt to encircle the enemy and annihilate him in a "cauldron battle," satisfying both tactical and strategic aims at the same time. Seeckt and the manoeuvrist school would regard the driving of the enemy from his position as the necessary tactical opening to an operational victory.)
- The manoeuvres indicated by art are those intended to overwhelm one wing only or the centre and one wing at the same time. An enemy may also be dislodged by manoeuvres for outflanking and turning his position.
- These attempts have a much greater probability of success if concealed from the enemy until the very moment of the assault.
- To attack the centre and both wings at the same time, without having superior forces, would be entirely in opposition to the rules of the art.
- The oblique order has no other object than to unite at least half the force of the army in an overwhelming attack upon one wing, while the remainder is retired to the rear, out of danger of attack, being arranged either in echelon or in a single oblique line.
- The different formations may all be varied by having the lines of uniform strength or by massing troops at one point.
- The object of the defence being to defeat the plans of the attacking party, the arrangements of a defensive order should be such as to multiply the difficulties of approaching the position (i.e., obstacles) and to keep in hand a strong reserve, well concealed, and ready to fall at the decisive moment upon a point where the enemy least expect to meet it. (To Jomini, the counter-attack at the key time and place was an essential element of defence.)
- An order of battle that united the double advantages of arms fire and the moral effect produced by an onset (e.g., fire and movement) would be perfect.
- As it is essential in an offensive battle to drive the enemy from his position and to cut him up as much as possible, the best means of accomplishing this is to use as much material force, i.e., fire power, as can be accumulated against him. It sometimes happens, however, that the direct application of main force is of doubtful utility, and better results may follow from manoeuvres to outflank and turn that wing which is nearest the enemy's line of retreat. He may, when thus threatened, retire, even though he would fight strongly and successfully if attacked by main force. A skillful general should know how to employ the means to gain them when opportunity offers, and especially should he combine these turning movements with attacks by main force.
- The combination of these two methods—the attack in front by main force and the turning manoeuvre—will render the victory more certain than the use of either separately; but in all cases, too extended movements must be avoided, even in the presence of a contemptible enemy.
- The manner of driving an enemy from his position by main force is the following: throw his troops into confusion by a heavy and well-direct fire of artillery, increase this confusion by vigorous charges of cavalry, and follow up the advantage thus gained by pushing forward masses of infantry well covered in front by skirmishers and flanked by cavalry. The morale effect of the defeat of the first line often occasion the retreat of the second and cause the general in command to lose his presence of mind. If the general and the troops of the defensive army are equally active in the performance of their duty, and preserve their presence of mind, if their flanks and line of retreat are not threatened, the advantage will usually be on their side at the second collision of the battle; but to ensure that result, their second line and the cavalry must be launched against the victorious battalions of the adversary at the proper instant, for the loss of a few minutes may be irreparable, and the second line may be drawn into the confusion of the first. (The German elastic defence, which requires a counter-attack as part of the defensive tactics, is based on this principle.)

Lieutenant Vincent J. Curtis, CD

- From the preceding facts it may be deduced that the most certain of all means of gaining victory is the employment of the reserves, masses of cavalry, and artillery to strike a decisive blow at the second line of the enemy; for here is presented the greatest of all the problems of the tactics of battles. The critical moment is usually when the first line of the parties is broken, and all the efforts of both contestants are put forth. (In other words, the enemy is not decisively driven from his position until the counter-attack is beaten off. The victory is decisive if the second enemy line is destroyed.)
- The fire of musketry can be much more effectively used in the defensive than in the offensive, since when a position is to be carried, it can be accomplished only by moving upon it, and marching and firing at the same time can be done only by troops as skirmishers, being an impossibility for the principal masses. The object of the defence being to break and throw into confusion the troops advancing in the attack, the fire of artillery and musketry will be the natural defensive means of the first line; and when the enemy presses too closely, the second line and part of the cavalry must be launched against him.

CONCLUSION

Jomini was regarded by the Western World for much of the 19th century as a leading expert on warfare. He was the first, for example, to conceive of the operational level of war, which he called "grand tactics," and the first to describe the strategy of "interior lines." It was only the success of Prussian arms in 1866 and 1870 that made the world aware of Clausewitz and caused the decline Jomini's influence. Jomini wrote a practical handbook for commanders and their staffs. As technology advanced, some of the practical advice of Jomini became dated, whereas Clausewitz, attempting to write a book for the ages, concentrated on timeless principles that are always relevant. Nevertheless, where both men write on the same matter, they express similar views. Where they differ, it is on emphasis. Battle itself is one crucial example. Clausewitz, ever mindful of the human suffering and moral drama of battle, held as a first principle that battle was justifiable only to decide something relevant to the strategic aim of the war, and that battle, when joined, should be taken to an extreme. Jomini, in contrast, rather bloodlessly takes battle to be a given and a victorious campaign to be the ultimate aim. Absent in Jomini's work is the concept of annihilation that is so dominant in the thinking of Clausewitz and Schlieffen. To Clauswitz, war had an end; to Jomini, wars ended. Clausewitz was the more profound thinker of the two; Jomini the more practical. Jomini's reputation as a military writer was well deserved, and the value of Jomini's contribution to developing a systematic body of thought on the practical art of war cannot be denied. The timelessness of his insights should be evident from the extracts given above. In these days of manoeuvre warfare, the truths and insights of Jomini are just as applicable as they were in 1838, and the principle of the unity of truth requires that any analysis of battle and warfare needs to take these insights into a harmonious account for that analysis to be valid.

Jomini's underlying idea is to defeat the enemy piecemeal. Overwhelming force is concentrated against a portion of the enemy, and the destruction of this portion will oblige the rest of the enemy to withdraw or will give the attacking force such a geometric advantage that if the enemy did not withdraw, their defeat is certain. If the enemy is spread out, a concentrated attack on the centre of his line will break it, and further forward movement will divide his forces. If the enemy does not withdraw, each of the two separated wings is destroyed successively. When the enemy formation is compact and presents a tough front, an attack against a wing, especially if the attack is angled to the enemy's line, can crush the line or at least turn the enemy out of his position. Alternatively, a decisive blow can be aimed at the enemy's rear rather than at his line, but for the blow to succeed, the enemy has to be occupied with attacks on his front. One third of the force occupies the enemy and two thirds are used to attack the rear. This style of attack savours of an operational manoeuvre rather than a tactical one, but this manoeuvre is nevertheless as effective against a platoon or section in the defence as it is against a division.

Jomini's "most reasonable" formation combines a frontal attack against the centre of the enemy's line with an angled attack against one wing. The other wing of the attacking force is refused. The formation amounts to a convergent attack against the enemy wing by the bulk of the forces. An attack by a combat team with the infantry attacking along an axis in the centre and the tanks converging from the flank along another axis is an example of this technique.

By reflecting upon the diagrams of Jomini, a commander, even in the age of manoeuvre warfare, can gain an appreciation for the strengths and weaknesses of different battle formations and the geometric advantages and disadvantages of each. Subordinate commanders who understand what should be happening on the battlefield are better able to shorten the decision/action cycle and fulfill commander's intent.

ABOUT THE AUTHOR...

Lieutenant Vincent J. Curtis holds a Master of Science degree in Chemistry from the University of Waterloo. A reserve officer, Lt Curtis began his civilian career as a research scientist with the Ontario Research Foundation, and for the last 16 years has been the owner and President of Tribochem Inc., a chemical company located in Cambridge, Ont. Lt Curtis presently is the Senior Subaltern and serves as Second in Command "C" Company of The Argyll and Sutherland Highlanders of Canada (Princess Louise's). Lt Curtis is a graduate of the OPDP/CFMSP program and has had life long interest in antiquity, antiques and warfighting theory.

ENDNOTES

1. Baron Antoine de Jomini, The Art of War (Stackpole Books, 1995), p. 198.
2. Ibid, pp. 178 - 203.
3. Carl von Clausewitz, Roots of Strategy Book 2 (Stackpole Books, 1987), pp. 334 - 348.

The Honourable John McCallum, Minister of National Defence, pays his respects to a memorial to Sapper Christopher Holopina, during Remembrance Day commemorations held during the Minister's visit to Operation Palladium, Roto 11, on 10 and 11 November 2002. Sapper Holopina served with 2 Combat Engineer Regiment and died on 4 July 1996, while serving with the NATO led Implementation Force. He is one of 20 Canadian soldiers to have lost their lives while serving in the Balkans. Camp Holopina in Coralici was also named after him. The Honourable John McCallum is joined by Mr. David Pratt, Chairman of the Defence Committee (right), and Colonel Peter Atkinson, commander of Task Force Bosnia and Herzegovina (left). (Courtesy Combat Camera/Corporal John Clevett)

Lieutenant Vincent J. Curtis, CD

The Army Reserve on Operations

Reconsidering how Reservists are Integrated on Overseas Operations

by Lieutenant-Colonel P.P.J. Lessard, CD

INTRODUCTION

The integration of sizeable Army Reserve reinforcements into Regular Force units on overseas operations has been routine for some ten years now. The experience is now a familiar one and an important part of force generation. Indeed, no Regular Force combat arms unit can currently deploy without sizeable reserve reinforcements, even if fully manned in accordance with VCDS manning priorities.[1] The experience is also a successful one, even though its concept is only gradually being formalized first with the 1994 White Paper mobilization construct and now with the Land Force Reserve Restructure (LFRR) Strategic Plan.[2] As LFRR advances, it is timely to review that experience to assist in developing a concept that will drive the more ambitious goals set for Stage One and Two Mobilization. This article, therefore, offers some observations on recent Army Reserve involvement in operations. It seeks to examine a number of themes from a factual basis with a view to offering some recommendations for future operations and continued LFRR policy development.

SCOPE

Stage 1 Mobilization envisions the Reserve Force providing "individual augmentation with an occasional requirement for the provision of formed[3] elements, particularly for domestic operations." Later, this became "individual augmentation up to 20% of existing forces, with an occasional requirement to provide formed elements to organizations such as Peace Support Operations (PSO) and, especially in domestic operations such as response to natural and manmade disasters."[5] The discussion below deals only with PSO, although some of its conclusions may also apply to domestic operations. It is based on observations in both a benign (Bosnia 2002) and fairly hostile environment (Bosnia 1993).[6] It covers *supplementary* reinforcements, which have been the brunt of our experience, and not *complementary* reinforcements. Finally, the discussion of "formed" elements is limited to the section and platoon levels. Whilst this falls short of the greater goals set in some documents, its relevance is assured, for these levels, combined with individual reinforcements, are the building blocks of any organization.

SOURCING

The volunteer nature of a Class C contract for operations indicates that motivation is the first element we must examine to understand the Army Reserve's contribution to operations. In 2002, the three most frequently cited reasons for going on operations overseas are money, adventure, and professional development. Altruistic reasons (duty and humanitarian) are significantly less important.[7] This indicates that a healthy package of pay and benefits, competitive with the private sector, may have a direct effect on the number of volunteers for a mission. Adventure, a much more positive source of motivation, rated the same high level of response. This, and the fact that Army Reserve volunteerism was not fazed by the much more dangerous environment that was Bosnia in earlier years, offers evidence that a wide scope of PSO are attractive to our reservists. For a fair number of them, this could even extend to warfighting operations. We should, therefore, ensure that the opportunities open to our reservists offer sufficient challenge. Meanwhile, professional development, and in particular the opportunity to learn from the Regular Force, was also a very strong motivator, which will be discussed later. Transfer to the Regular Force was another motivator of note. Indeed, a third of reservists declared overseas service was a way to facilitate their transfer to the Regular Force, to the point that it influenced their decision to volunteer.[8] This particular factor is difficult to assess. The opportunity to transfer, in the eyes of a soldier, may well be a source of retention in the early years of a reservist's service, although such transfers deprive Army Reserve units of valuable experienced soldiers. Add to that the benefit to the Regular Force and, in the end, it probably benefits the Land Force as a whole. Successful motivational factors—money, adventure, and professional development—should, therefore, be understood, fostered and, if required, enhanced and promoted. Less successful factors should be examined to determine whether they are deficient because they do not receive sufficient exposure or simply indicate that there is a lack of interest in what they represent.

Another significant factor affecting sourcing is the current Army Reserve order of battle, which is characterized by a large number of units with very reduced manning. The result is a patchwork draft. In the case of 2e R22eR Bn Gp, it

consisted of 165 personnel, representing 17 trades and classifications from 31 different units in the designated area, SQFT. Individual unit representation varied from one to 17 individuals. Only five units were able to provide more than ten soldiers.[9] This situation is typical of a major unit deploying overseas with close to 20% Army Reserve reinforcement. In the current environment, a single Army Reserve unit can, therefore, offer no more than one section equivalent or at the very most two sections, perhaps within a platoon framework. This has organizational implications, as will be seen later. A heavier need for reservists (when an LFA must generate two successive rotations of troops for instance) will exacerbate this situation. The available pool of reservists is then heavily taxed, which results in more scatter and a corresponding impact on the reserve brigades' or units' ability to generate integral sections or platoons and, inevitably, on the overall quality of personnel. However, one should not conclude that a single rotation would attract twice as much interest and hence facilitate the formation of integral organizations at source. Indeed, the time of year a unit deploys significantly affects the availability of Army Reserve reinforcements.[10] The result is that, with the current order of battle and Army Reserve strengths, drafts will remain a patchwork of many units with an inherent lack of cohesion.

ORGANIZATION

Once volunteers are found, the next step is to assemble or assign them. The manner in which this is done depends on the type of reinforcement: individual or "formed."

Individual reinforcements. Currently, individual reinforcements are managed in a way that attempts to reconcile divergent needs without the benefit of an understood framework upon which to base decisions. To address this requirement, the author proposes two methods of managing individual reinforcements. The first is a "pull" system, whereby the deploying unit determines what its shortages are and seeks reinforcement. The other is a "push" system, such as a quota (e.g., 20%) or stipulations in terms or rank or position (e.g., three platoon commanders), which would serve to ensure a measure of capability comes from the Army Reserve. We will see later how such a quota could be integrated. From the perspective of the receiving unit, the simplest and most efficient method by far is to allow commanders to choose the reinforcements they require and employ them where they are needed and where their potential can best be exploited. There is much to support a "push" system, though. Regular Force mission fatigue and over extension suggests it is wise to fill a portion of the ranks with eager reservists. The need to strengthen the Reserve Force and particularly its Sr NCOs and officers means the solid experience acquired on a mission can then benefit their parent units. As will be seen later, the latter two purposes have been understood and communicated with varying degrees of success along the chain of command. In the end, the nature of the mission, the warning time, and the relative importance of offering expertise opportunities to the Army Reserve will determine the appropriate balance between "push" and "pull" imperatives. As a rule of thumb, the more intensive the mission and the shorter the preparation time, the more it should rely on a "pull" system.

We should ensure that the opportunities open to our reservists offer sufficient challenge.

Integral sections and platoons. A tremendous amount of energy is invested into making organizations composed exclusively of reservists perform at a deployment standard.[11] Eventually, most do.[12] Unfortunately, this goal is achieved without the sound framework needed to make it happen harmoniously. Indeed, integral Army Reserve sections and platoons are widely perceived to be the antithesis of our beloved philosophy of mission command. And, in fact, they do represent a form of micro management in which a CO or OC is expected to organize his personnel according to their *origin*, as opposed to their *capabilities*. The results are uneven capabilities across a platoon or company, artificial obstacles to the proper employment of personnel, and a heavy demand on company leadership to get involved in sorting out all kinds of problems that could have been easily resolved at the section or platoon level had there been a bit more experience present there. Moreover, very few reservists themselves want it.[13] Many feel that integral organizations deprive them of the close contact with the Regular Force that inspired them to volunteer in the first place and that they cannot benefit from the learning experience that comes with having a few Regular Force members in their midst. Far from creating harmony, such organizations foster a subtle and at times tense us-versus-them mentality, no matter how hard the leadership tries to smooth it out. Additionally, some feel that it creates a phenomenon known as "militia syndrome" or "militia stress," which is characterized by the self-imposition of unwarranted hardship or over-compensation in the face of perceived Regular Force scrutiny. A related phenomenon is the illusion, within a physically separated integral platoon, that the tedious aspects of soldiering are not to be found in Regular Force organizations–a misconception that is quickly erased as soon as that separation disappears! More importantly, there is overwhelming historical evidence[14] that cohesion is maintained and new or inexperienced arrivals learn faster and better when inserted into an existing cadre, both at the "buddy system" and the leader-teacher level. Finally, the importance of sharing implicit intent between levels of command means organizations should be based as much as possible on proven, trusted command relationships at the interpersonal level. Considering all of these drawbacks, one would expect strong arguments to convince all and sundry of the validity of such an effort.

Unfortunately, this rationale is not clearly communicated. In the case of 2e R22eR Bn Gp, a thorough review of orders, command direction, etc. yielded only two reasons for going ahead with integral organizations: firstly, providing the Army Reserve with an opportunity to acquire operational expertise and, secondly, lightening the load on Regular Force personnel.[15]

The first objective, operational expertise, is gained mainly by direct experience, coaching and example. In an integral section or platoon, some of these elements are curtailed. There is a tendency, in the early stages of a mission, to assign easier operational tasks to the integral organizations so as to allow them to "find their feet" before taking on bigger challenges, but in fairness, this does not significantly reduce the direct experience opportunity. Coaching, however, a leadership duty that should come from seasoned mentors at the immediate supervisor level, is received instead from higher levels of command, where the requisite expertise is present, usually in the person of a concerned but already overburdened platoon WO or CSM. It also comes out of the goodness of heart of neighbouring organizations, but this only works in very quiet periods. The personal example of experienced soldiers, and senior NCOs in particular, is removed to another section or platoon, which is very unfortunate, considering the astounding difference a single veteran soldier can make in some integral organizations. Let us be clear here: our Regular Force members are not any more intelligent than their Reserve Force counterparts, nor do they have some sort of genetic predisposition that makes them better soldiers. Their only advantage is a wealth of experience, wisdom, and natural selection obtained after long years of individual training and collective exercises, as well as during operations. Integral organizations severely impede the transfer of this experience to eager reservists. If acquiring operational expertise is the true objective, then that apprenticeship will be more efficient and well rounded through the employment of mixed organizations. These could be predominantly composed of reservists and would include a few seasoned Regulars at every level of command.[16] Mixed organizations have the added benefit of allowing Regular Force members to learn more about the Army Reserve and to develop closer personal bonds with reservists.

The second objective is lightening the load on the Regular Force as repeat missions are taking their toll, particularly at the Sr NCO level. This objective is achieved by taking on a share of the burden so we should be careful to tailor Army Reserve reinforcements to include a proportion of officers, Sr NCOs, and junior ranks. However, do these replacements need to be *together* in integral organizations? The answer is no, as long as specific objectives are set. For example, a deploying unit may be told to incorporate the equivalent of an Army Reserve infantry company, engineer section, etc. in their dedicated positions. Leadership positions for reservists are legitimate strategic objectives that, clearly enunciated in the Commander's intent of the relevant orders, would become non-negotiable aspects of the mission. However, the unit leadership should be left free to determine where each individual can best be employed and coached to optimize teams for best performance as well as have the final say in whether an individual meets the standard. Moreover, we should not underestimate the added burden of training an integral organization, which significantly *increased* the load on many officers and Sr NCOs, and this on top of the very high tempo generated by normal pre-deployment preparations. We can now say that this toll was even more exacting during the preparation of the Composite Reserve Infantry Company (CRIC) currently deployed with 1PPCLI in Bosnia. The aim of lightening the load on the Regular Force is, therefore, not achieved by employing reservists together in integral organizations but rather by employing them more wisely.

We have just seen that Reserve Force integral organizations imposed on a Regular Force unit deploying for an operation do not support the two reasons for their existence. Our analysis would not be complete, however, if we did not consider other reasons that may justify their creation. The key one is cohesion. But whose cohesion and at what level? Of course, if a section or platoon arrives at a deploying unit fully trained, then it should be kept as such. But this has not been the case. Of the fifteen sections and one platoon observed in operations, none had even completed their individual training, let alone collective training, before arriving at the unit. It was not even possible to form a section from a single unit of origin even though every effort was made to respect unit affiliation. Most sections were composed of

Troops Moving Up

personnel from two or more Army Reserve units who seldom knew each other beforehand. Therefore, if there is some cohesion to be derived from segregating the reservists from the regulars, it may lie in the realm of the wider *esprit de corps*, or pride, of belonging to the Army Reserve as a whole. Indeed, one should not underestimate the positive effect of a concrete, praiseworthy achievement that can be pinned on an integral organization. However, we have seen above that the reservists who deploy do not want to belong to the integral organizations, so it is safe to say that their pride in the Army Reserve would be just as strong if they served in mixed sections. Moreover, the only cohesion that counts, ultimately, is the one found at the lower levels of team, section, and platoon.[17] This leaves as a possible source of cohesion only the sense of pride felt at more senior levels of the Army Reserve. Surely, however, being able to say "we did it" should not weigh in the balance when compared against the serious drawbacks noted above.[18]

Regular Force members are not any more intelligent than their Reserve Force counterparts

Another possible reason for integral organizations would be the use of them as a first step or interim capability on the road to fielding integral reserve companies or even battalions for certain missions. In effect, this experience could even serve as a mobilization "test bed". If this is the case, such an objective should first be articulated in relevant policies or direction and thought applied to determining which kind of mission is appropriate for which capability. A mechanism should then be put in place to formerly evaluate the results in order to assist in mobilization planning. Unless it became a regular validation exercise, such an experience would only be temporary and would have to be supported by an important mobilization planning effort.

Once again, then, we must conclude that there is currently no sufficient reason to justify the inclusion of truly integral sections and platoons in deploying units. If we accept that the ultimate aim is mission success, the means to reach that end must be tailored accordingly. The legitimate objectives stated above would be best achieved through the employment, on selected missions, of a proportion of *predominantly* reservist sections, platoons, and companies.[19] Indeed, a small cadre of Regular Force members at every level would ensure the transfer of experience, foster harmony, allow the build up of expertise amongst the Army Reserve, and provide a needed relief to the Regular Force. Such an arrangement would be a "win-win situation" where the deploying unit, the individuals, and the Army Reserve all gain tremendously.

TRAINING

As military affairs evolve, so must training, which includes the training of reservists. The crux of the matter is how much training is needed, and when and how fast to integrate relatively highly trained regulars with reservists who, by definition, have other obligations that preclude full-time training. This problem is not new. It was present in the armies of antiquity, and it became more acute with successive "revolutions in military affairs." The increasing complexity of war meant a shift towards a greater reliance on a permanent, or regular, force.[20] The pattern continues today. As we are witnessing the abandonment of quantity in favour of quality,[21] the training question becomes even more difficult. To illustrate what higher complexity means, let us use the example of an integral reservist infantry section mounted on LAV III with everything this entails (TCCCS, Eryx, M-203, GPS etc). The 2e R22eR Bn Gp had four of these sections for operations with SFOR in Bosnia-Herzegovina. Their crews reported to the Battalion *seven months* before deployment. This was to allow LAV III crew courses, warfighting collective training, and then PSO training. Once in theatre, these sections were placed in situations where, their commanders or MCpl 2ICs had to make snap decisions on their own on such things as using force to search vehicles and houses or whether the circumstances allowed the arrest of a dangerous, guarded Person Indicted For War Crimes (PIFWIC) during a fortuitous encounter. These are situations that rely less on drills, such as reacting to enemy fire or applying first aid, and more on knowledge and judgement. So was this level of pre-deployment training too much or too little? Could it be shortened by cutting out some elements, or else increasing the training level resident in the Army Reserve?[22]

The answer is a difficult one. Depending on where it stands in its training cycle and the Army Training and Operations Framework (ATOF), a typical Regular Force unit will need between 30 and 90-days preparation to deploy. Assuming IBT and individual qualification training are completed, a battalion should spend at least one month on warfighting training,[23] two or three weeks PSO training,[24] two or three weeks catch up training,[25] and two or three weeks administration and leave. But when does training start? If a unit designated UN Standby Unit achieves operational readiness on the 1st of June, then suffers an annual posting season and requires 30% individual reinforcements to deploy in October, is its collective warfighting training still valid? If we accept that cohesion is essential to military operations, then training can only start when the unit (or, as a minimum, the component sub-units) is assembled. Based on the conditions above, this means that a unit on 30-days notice to move can only suffer minimal personnel turbulence and should be fully manned, at TO & E strength, with screened and trained personnel. There is little scope for Army Reserve reinforcement here, unless we are ready to provide indeterminate Class C contracts to volunteers ready to make themselves available for more than one year. The alternative is to accept a certain level of degradation in unit cohesion as the teams that trained together erode and are then filled with newcomers shortly before deployment.

Lieutenant-Colonel P.P.J. Lessard, CD

Based on the above, and returning to the issue of "push" versus "pull" individual reinforcements, we can deduce that a unit on 30-days notice to deploy with the UN Standby, High Readiness Brigade could probably only rely on Regular Force reinforcements to be generated quickly enough. A unit given about 90-days warning of a PSO could receive Army Reserve reinforcement, but should probably limit itself to what it needs and asks for on a "pull" basis. Finally, a unit warned for a mature, stable mission long on the ATOF would have plenty of time to source, train and integrate a set level of individual reinforcements with quotas defined by the LFA commander in terms of rank, numbers, trade etc. This is supported by a consensus[26] that, for a PSO, it currently takes three months for reservists to achieve the Deployment Level of Capability (DLOC). This success story reflects the formidable motivation of our reservists, who overcame an initial generalized lack of physical fitness and experience. Indeed, typically, it will take some two months before disciplinary and administrative cases are weeded out, that catch-up individual training is completed,[27] and that a degree of cohesion sufficient to allow the commencement of collective training is achieved.[28] Such a pattern suits the latter kind of mission well.

Taken from another angle, the question becomes one of determining what steady state level of training the Army Reserve should achieve and in which fields (the "start state" for Stage 1 Mobilization). For example, if we expect reservists to fill such jobs as LAV III crew commander, or Coyote operator at around 90-days notice to move, the Army Reserve must have a pool of suitably trained individuals on a permanent basis. Furthermore, if a 90-day notice to move is envisaged for the Main Contingency Force, and this force is envisaged to be employed for more demanding missions and composed of relatively high numbers of reservists,[29] then clearly the reservists that will reinforce such a force must be at a level of training and hold the qualifications that would allow them to participate almost immediately in the lengthy warfighting collective training such a mission requires. If, on the other hand, the mission is planned in the ATOF years ahead, then, as with 2e R22eR Bn Gp, designating a Reserve Force quota much earlier, in order to provide them the necessary individual qualifications and collective training opportunities, becomes an option. Until then, the supplementary role will largely remain, with some exceptions as noted above, to functions requiring less formal training, such as light infantry in a PSO role, riflemen in a LAV III section, etc. For leaders, of course, it is more complicated. Ideally, fully IBTS trained reservist leaders would arrive at a unit early and undergo confirmatory collective and leadership training before receiving their soldiers.

A Combat Team Attack

IDENTITY

Regiments were formed for a variety of reasons and are retained today because it is widely accepted that they foster the *esprit de corps* that makes soldiers fight together. Our history is full of such units being created, amalgamated, re-roled, disbanded for use as individual reinforcements, etc. One constant, though, is that once committed to battle, soldiers of a unit normally assumed the same unit identity. Today's wars, called operations, have violated this principle. Reservists retain the identity of their unit of origin.[30] This probably bolsters the esprit de corps of an Army Reserve unit, yet the ultimate reason for a unit's existence is preparation for Stage Three or Four mobilization. The urgency of that preparation, i.e., the possibility of mobilization, must be weighed against the imperative of ensuring success in current operations. Unfortunately, identity with outside units has a negative impact on low-level cohesion. Indeed, no matter how well the integration occurs, how good the cooperation, and how high team spirit reaches, there always remains that lingering sentiment of "us" and "them" within a section or a platoon that performs the same task together. We will never be able to erase this obstacle as long as we persist in branding soldiers as different. Indeed, why should two riflemen doing the same job in the same section for nearly a year be identified as members of different units? We must rethink the wisdom of this. Pride in, say, the Régiment du Saguenay is valuable in training and essential if that regiment is mobilized for operations. On a battalion group deployment for a PSO, it is irrelevant and quite possibly counter-productive. Some form of common unit identity

should, therefore, be worn by deploying members. However, we must be careful to acknowledge that as tasks begin to differ, there is value in special identity. For instance, everyone understands that mechanics, signallers, clerks, etc. are experts in their field and are identified as such with the wearing of respective badges and insignias. Similarly, formed elements, such as an armoured reconnaissance squadron, will have been sourced, trained, and otherwise prepared by a parent unit and will arrive as a homogeneous whole with its own identity. Once again, though, this should be reconciled with the need for a common unit identity.[31]

Army Reserve objectives, just like Regular Force objectives, must be tied to defence objectives

CONCLUSION

Our reservists deserve the utmost praise for their valuable contribution to Canada's missions overseas as well as the deepest gratitude of Regular Force units for providing an essential reinforcement without which they could not operate. But we are at a crossroad: Army Reserve objectives, just like Regular Force objectives, must be tied to defence objectives and integrated into a whole. Only then will we obtain a sound concept of employment for the Reserve Force. This concept must be the fruit of logic and must clearly link objectives to method and means. It should incorporate the following recommendations. Firstly, motivation should be studied and fostered. We should also determine what steady state training level Army Reserve units should attain to harmonize the availability of trained reservists with Regular Force operational tasks. We must develop a concept that incorporates guidelines for a "push" or "pull" system of individual reinforcements based on the nature of the mission. Until such a time as we build the capability for the Army Reserve to assemble and train cohesive sections and platoons, we should abandon the pointless effort of creating such organizations artificially once they are within a deploying unit. Instead, we should determine the optimum mix of Regular and Reserve Force personnel within specific organizations likely to deploy on certain types of missions. This could provide a useful template to guide sourcing and personnel allocation for a deploying unit. Finally, we should reconsider for what purpose and under which conditions regimental affiliations should be retained in operations. It is the author's hope that dispassionate consideration of the above recommendations will allow us to progress to a common understanding of the employment of reservists on operations that befits the maxim of "Unity of thought, purpose and action."

The author would like to thank Colonel Richard Blanchette, Colonel Marquis Hainse and Major Kevin Brown for their valuable comments on the first draft of this article.

ABOUT THE AUTHOR...

Lieutenant-Colonel Pierre Lessard was born in 1963, in Alliston, Ontario. He graduated from the Collège militaire royal de Saint-Jean with a bachelor's degree in business administration in 1985. He commanded a mechanized infantry platoon in Germany in 1985-1987 with NATO, a mechanized infantry company in Bosnia in 1993 with UNPROFOR and 2eR22eR Battalion-Group in Bosnia in 2002 with SFOR. He is currently serving as Directing Staff at the Canadian Forces Command and Staff College in Toronto, Ontario.

ENDNOTES

1. Typically, 20 % of a "fully manned" unit fails pre-deployment screening for a variety of reasons (medical, disciplinary, family etc). Add to that additional requirements on the mission TO & E (such as liaison officers, CIMIC, extra intelligence etc) and the fact that some units are in fact below full strength, and the actual shortfall is much higher.
2. Department of National Defense, *LFRR Strategic Plan*, 6 October 2000.
3. The precise meaning of the word "formed" is key. In French and English, this word implies that a body of troops is both *assembled* and *trained*.
4. LFRR Strategic Plan, *op cit*, p 1-20.
5. Department of National Defense, *Concept*, LFRR Website, 26 June 2002.
6. Essentially, it is based on the author's experience in Bosnia, first as OC "A" Company, 2e R22eR BG in 1993 with UNPROFOR, and then as CO 2e R22eR Bn Gp in 2002 with SFOR.
In 1993, A Coy consisted of 118 all ranks, of which 55, or 47 %, were reservists, selected from an initial draft of some 70 individuals. Each platoon had an integral reservist section. (B and C Coy had identical reinforcements for a total of nine integral sections in the Battle Group, plus individual reinforcements.) Each rifle company also had a reservist platoon commander while B and C Coys also had a platoon 2IC. For A Coy, the mission consisted mainly of protecting the enclave of Srebrenica (four months) and escort duties around the Visoko-Sarajevo area (two months). Conditions then were austere, in an environment in which A Coy reported over 16,000 instances of what were known as "Cease fire violations", was itself fired upon on 59 occasions, returned fire a dozen times, suffered two light casualties and, we believe, inflicted one or two casualties. (Other companies were less lucky. Cbt Sp Coy mourned the death of Cpl Gunther to deliberate anti-tank fire and B Coy suffered two serious casualties in a grenade and machine gun ambush.)
In 2002, 2e R22eR Bn Gp rifle companies consisted of 124 all ranks, of which between 22 and 30 were reservists, or only around 20 %. The total reservist contribution to the Bn Gp was 165 all ranks, or 16 % of the total strength. These numbers included one integral reservist infantry platoon, four infantry sections, one engineer section and one artillery detachment as well as individual reinforcements elsewhere.

The Bn Gp mission consisted of maintaining a safe and secure environment. Conditions were comfortable and the environment was generally benign. Indeed, this time not a shot in anger was heard in six months. Paradoxically, even though stress levels were considerably less than in 1993, junior leaders periodically had to exercise more authority and consider more options in the fulfillment of their missions, which added to the complexity of their task.

7. Survey conducted between 5 July and 5 August 2002 of all reservists deployed with 2eR22eR Bn-Gp on Op PALLADIUM Roto X. Out of an initial strength of 165 reservists, only individuals on leave or who had been repatriated did not respond. This meant that 142 questionnaires were returned and analyzed, representing 86 % of the reservist population. To the question "What motivated you to volunteer for this mission ?" three answers were allowed. Results were: Adventure (74 %), Money (74 %), Learn more about my trade (53 %), Help Bosnia (32 %), Facilitate a transfer to the Regular force (30 %) and serve my country (28 %).

8. After four months in theatre, fully 52 % wished such a transfer (Survey, *op cit*).

9. The results may have been greater if the previous rotation of troops would have come from another LFA.

10. Survey, *op cit*. To the question "Could you have volunteered for Roto IX [also generated by SQFT] and if not, why ?", 60 % of respondants stated they could not or would not. Reasons given were: job (20 %), studies (15 %), not interested (12 %), family (2 %), other (11 %).

11. Interestingly, in both 1993 and 2002, there was no such thing as an integral *Regular Force* section. Every section included some reservists and performed admirably.

12. In 1993, of three integral sections in A Company, one was broken up for a lack of leadership and discipline and one saw the 2IC replaced with a Regular Force corporal. In 2002, of six such organizations in 2eR22eR Bn-Gp, the majority performed well, less two infantry section commanders who had to be relieved of their command in theatre and one soldier removed to a Regular Force section, again for disciplinary reasons. In the integral platoon, a three month incubation period on a D & S task allowed some weakness to be corrected. Eventually, the platoon performed at a level where in some basic skills, like a March and Shoot competition, it outperformed two mainly Regular Force platoons.

13. Survey, *op cit*. To the question "Would you have preferred to have been employed as an individual reinforcement instead of being in an integral section or platoon?" 39 % replied "very much", 7 % "rather", 33 % did not care, 10 % "not really" and 12 % "not at all". Only the artillery detachment was in favour of integral organizations. Significantly, in the integral platoon, results were: 50 % "very much", 20 % "rather", 20 % did not care, and only 8 % (two individuals) "not at all".

14. Amongst a multitude of war histories, narratives or studies that support this belief to the point it can be considered axiomatic, see, for a narrative, Guy Sajer, Le soldat oublié, 1967, Robert Laffont, (English translation, *The forgotten soldier*, 1971, Harper and Row.) To understand the psychology see Elmar Dinter, *Hero or Coward? Pressures facing the soldier in battle*, 1985, Frank Cass and Co. Finally, for some insights on ratios, see Capt Adolf von Schell, *Battle Leadership*, 1933 & 1988, Marine Corps Association.

15. In a letter dated 27 Aug 2001, Commander SQFT stated that "mon intention est de donner à la Milice une tâche robuste qui cadre bien avec le Plan stratégique de la restructuration". Unfortunately, the LFRR Strategic Plan does not reveal the specific purpose behind integral organizations. The CLS Mounting Order (3350-6 DLFR 3-3, CLS Mounting Order for Op PALLADIUM Roto 10, 14 Sept 2001) contained no direction on employment of Reservists except for imposing a cap of 20 % on augmentation. The next guidance received, DCDS 171 171530Z SEP 01, DCDS Warning Order for Op PALLADIUM Roto 10, contains no direction on Reserve force reinforcements. The SQFT plan (Plan opérationnel de montée en puissance–Op PALLADIUM Roto 10) dated 4 October 2001 states, in the Commander's intent, that "Afin d'acquérir une expertise opérationnelle et d'alléger la demande en personnel, les deux brigades de Milice se verront confier un certain nombre de capacités opérationnelles, en plus des renforts individuels habituels." The 5e GBMC plan (Plan opérationnel de montée en puissance — Op PALLADIUM Roto 10) dated 15 October 2001 contains, in the Commander's intent, clear direction on *how* Army Reserve reinforcements will be integrated, and the importance of such augmentation but, sadly, leaves out the *purpose* above that was contained in the SQFT order. It does refer to objectives stated in the 5e GBMC Partnership Initiative, dated 7 July 2001 but these are only very general (ie fostering trust and confidence between components, maximizing resources etc). In the latter document, the effort to be undertaken for integral organizations is well described, but, again, not the purpose behind them. The last order received, COS J3 048 012115Z FEB 02, Rotation Order, Op PALLADIUM Roto 10, contains no guidance on the use of reservists. Therefore, only the SQFT Plan contained a statement of the purpose behind integral organizations.

16. Von Schelle, *op cit*, pp 40-47, considers that if all officers, about one third of Sr NCOs and one fith to one sixth of soldiers are experienced, a unit will adopt a veteran character, will fight well and will be spared heavy losses. Applying this template to a PSO and using anecdotal evidence from recent operations, we could obtain excellent predominantly reservist infantry platoons with only seven Regular Force members out of 37: the platoon 2IC, one section commander, two section 2ICs and one corporal per section.

17. For the theory, see Dinter, *op cit*, pp 40 to 50 and 76 to 79. For the most compelling depiction of the raw power of such low level cohesion, see Sajer, *op cit*.

18. To reflect on this subject, the reader may find assistance in Clausewitz' seminal work, *On War*, which devotes a few pages to the subject of pride, honour and vanity.

19. The 1 PPCLI BG Composite Reserve Infantry Company deployed with Op PALLADIUM Roto 11 includes three Regular Force members in the positions of CSM, CQMS and Tpt Sgt. This is not enough. See endnote 16 above.

20. From antiquity on, armies generally were composed of a mix of auxiliaries, line and elite troops. Successive military revolutions, however, shifted the balance between the need for highly trained specialists and basic soldiering. The late Renaissance, for instance, saw greatly increased complexity of skills required in fortification and sieges, developments in artillery etc (Geoffrey Parker, *The Military Revolution*, Cambridge University Press, 1996.) The French Revolution ignited an increase in the importance of mass but also of complexity in, for example, the scope of operations, tempo and manoeuvre at the corps and divisional levels. (David G. Chandler, *The Campaigns of Napoleon*, 1966, MacMillan, pp136 to 143.) Later on, advances in firepower, mechanisation, airpower and communications again altered this balance. As early as 1934, the then Captain Charles de Gaulle argued that it meant the end of a mobilization concept based on the integration into the order of battle of masses of conscripts with limited training. Instead, he advocated what was at the time the very antithesis of prevailing military thought in Continental Europe: the creation of a small professional army. (Charles de Gaulle, *Vers l'armée de métier*,1934, & 1971, Plon).

21. The trend towards quality at the expense of mass is spurred by the growing complexity and sophistication of military operations. These rely on increasingly intricate technology, as well as operations in which leaders and soldiers must be able to perform across a vast continuum of conflict, inside compressed levels of command ("the strategic corporal"), in ever shrinking OODA loops and under unprecedented levels of scrutiny, expectations and norms of ethical behaviour. Add to that the shift in the nature of tactical combat operations themselves (information operations, precision targeting, etc) and you have the current "Revolution in Military Affairs". No wonder, then, that hitherto mass-based armies are professionalising (France, Spain, Italy, Greece, Portugal and Austria are all abandoning conscription). For these countries, the disappearance of the Warsaw Pact threat may have been the spark, but replacing an army relying heavily on partially trained manpower with armed forces ready to fight in the new millennium was the only option. The push for quality is also evident in our own strategy (Department of National Defence, *Advancing with Purpose*, *The Army Strategy*, May 2002).

22. If we consider that a WW II rifleman in most armies typically

received only three months of training before being thrown into battle, and that we could probably do likewise today, then the distinction between a reservist and a regular starts to blur at this stage.

23. At least two weeks on pairs, team, section and platoon live fire attacks. There can be no compromise on these basic building blocks. Combat team and unit FTX should follow, although the nature of the operation (for example, a Chapter 6 mission) may provide the flexibility to replace Level 6 and, perhaps, Level 5 warfighting FTX with a CPX or CAX. For a Chapter 7 mission, which implies potential use of force to impose a military solution, Level 5 and 6 warfighting training is a sine qua non.

24. Around a week and a half of individual training on such things as Rules of Engagement, theatre intelligence briefings, negotiations, HUMINT etc and a week and a half collective training on crowd confrontation, cordon and search, vehicle checkpoints, escort duties etc.

25. Inevitably, some reinforcements will not have completed their IBT, nor will all Regular Force members of the unit. The latter will have missed some training due to the heavy tasking load, medical or parental leave etc.

26. This opinion was formed by all 2e R22eR Bn Gp sub-unit level commanders based on their assessment of reservists' performance in both 1993 and 2002.

27. Even though the "Mounting" order might direct that IBT training be conducted before reporting to a unit, this does not completely happen, for many reasons such as lack of capacity in the originating units or brigades, late decisions in allocating sourcing responsibility, communicating offers of a Class C contract etc. (For Roto X, up to 20 % of IBT were not completed before arrival at the unit. The percentage climbs to between 50 and 100 % not completed for those who arrived very early for LAV III courses.) In any case, the receiving unit itself usually needs to complete a percentage of its IBT after reinforcement arrive, largely because of the heavy tasking tax it receives before attaining "preparation" status on the ATOF.

28. Once in theatre, it will take a further two to three months to refine this to a level where everyone is fully integrated. At this point, it usually takes a conscious effort to remember who is a reservist and who is not.

29. The Army Strategy (National Defence, *Advancing with Purpose, The Army Strategy*, May 2002) envisions "more demanding missions" for the MCF while the LFRR Strategic Plan sees individual and formed reinforcement in Stage 2 Mobilization with follow on documents (undated, LFRR website) state that "It is likely that the reserve will increase its presence in some of the heavier type armour and artillery capabilities …".

30. Today, a soldier from, say, the Régiment du Saguenay, even after seven months of training with his new unit, and a further six months in operations, still wears the accoutrements of the Régiment du Saguenay. Conversely, a RSS officer will keep his cap badge even though he has joined a new unit. In both 1993 and 2002, every attempt was made to keep reinforcements from like units together. Invariably, this was rendered very difficult because of the need to employ people according to their qualifications and ability.

31. Interestingly, 78 % of reservists wish to retain their parent unit cap badge on operation, which indicates that Army Reserve units are successful in instilling pride of unit in their members. Any solution to this dilemma should reconcile that aspect with the need for unit cohesion in operations. Perhaps cap badges can be retained, but rank slip ons should bear the new unit title. For instance, the author felt that it was important for the NSE, a largely Ad Hoc unit, to establish unit cohesion and had no difficulty allowing 2e R22eR members to wear "ESN" (NSE) on their slip ons if they belonged to that unit in both training and in theatre. Ideally, a rank slip on with the insription "B 2e R22eR" should have been worn by all members of the unit, regardless of trade or parent unit affiliation.

A soldier from 1st Field Regiment, Royal Canadian Artillery Regiment laying a gun on the centre of arc during ARCON, the Land Force Atlantic Area Army Reserve Concentration. This annual exercise is Atlantic Canada's largest reserve training exercise, and was held at CFB Gagetown, from 23 to 30 August, 2002. Throughout the week, more than 1,400 Army Reserve soldiers participated in realistic collective training scenarios. The aim of last year's exercise was to review and refine offensive operations tactics and procedures. (Courtesy Combat Camera/Cpl J.J. Nightingale, CTCHQ)

Lieutenant-Colonel P.P.J. Lessard, CD

"Dying Like so Many Rats in a Trap"

Gas warfare and the Great War soldier.[1]

by Tim Cook

Through song and satire, Joan Littlewood's 1963 play, *Oh, What a Lovely War*, portrayed the Great War as a hopeless farce, in which soldiers were sacrificed to appease the aspirations of incompetent and homicidal generals.[2] When the Richard Attenborough film of the same name was released in 1969, it reached a worldwide audience. For those trying to cope with the Vietnam War, Attenborough's film seemed to offer some insight into the universal lunacy of war. While *Oh, What a Lovely War* was a polemical piece that tells more about the 1960s than the 1914-18 period, the film does offer, through two scenes, a useful starting point for evaluating the role of poison gas in the First World War.

The first is a memorable episode in which four soldiers are chirping about an upcoming gas attack; they sing:

Gas to-night, Gas to-night

They're warning us, they're warning us

One respirator for the four of us

Thank your lucky stars that the three of us can run,

So one of us can use it alone...

Certainly not out of place with the irreverent trench songs of the time, the verses underscore the initial unpreparedness of the Allied high command and soldiers in combatting the effects of gas. Being early in the film, the scene gives some insight into what actually happened during the initial stages of gas warfare in 1915. After the first chlorine attack, the senior officers scrambled to find anything that could protect their men against this new chemical agent. The development of a defensive doctrine was haphazard, ad hoc, and left soldiers decidedly uneasy as they received contradictory messages and bizarre-looking gas masks. Our singing cinema soldiers provide a stark image of hopelessness, and one that would ring true with most casual observers of the war. But after the first four lethal gas attacks on the Western Front, which came in April and May 1915, the development and use of protective respirators against chlorine was largely successful. Yet while respirators prevented chemicals from ravaging the lungs, poison gas did not disappear from the battlefield as most historians have implied by paying little attention to in their writing.[3] More importantly, it was not rendered ineffective.

Another scene in Attenborough's—which takes place at the and the end of the war—serves as a contrast to our four singing soldiers from the early part of the conflict. There is no singing at this point. In fact, there is no sound at all, almost as if the Western Front was devoid of all life. The image is simply of a respirator-clad soldier relentlessly pushing forward between tapes marking the safe decontaminated path through a contaminated gas zone. Despite looking like a bug-eyed alien, the soldier is still advancing over the chemical wasteland, demonstrating not only the environment in which the soldiers had to survive, but also fight. The occasional gas attacks in 1915 have been replaced by a pervasive gas environment which plagued the Western Front in 1918; and our four soft-capped wags have been replaced by the chemical soldier.

For those two film scenes to make any sense though, one must first understand that historians have, for the most part, misunderstood the role of poison gas in the Great War. The notion has largely been that once chlorine had burned out the lungs of those unlucky men at the second Battle of Ypres in April-May 1915, where there was little if any protection for individuals caught in the path of the death clouds, the eventual issue of respirators reduced poison gas to an annoyance. "Gas," wrote British Official Historian James Edmonds, "achieved but local success; it made life uncomfortable, to no purpose."[4] Quite simply, Edmonds was wrong. And sadly, perhaps attesting to the deep influence of the official histories, subsequent historians have similarly minimized the difficult task of the soldiers who were forced to survive in the gas environment of the Western Front, by assuming that either gas was ineffective or that its impact was annulled with respirators.

There have been several re-evaluations of gas warfare in recent years, and authors such as Fritz Haber and Donald Richter have further enriched our understanding of this weapon. With the benefit of all their research, these two full-length studies have drawn conclusions that gas was not, in the end, a significant weapon.[5] The impact of gas is difficult to fully ascertain and, indeed, it must be noted that the accepted rough figures of 100,000 dead and another million casualties from gas would never equal the killing effects of machine guns and artillery. At the same time, though, the minimally-accepted figures for gas casualties are, without a doubt, more numerous than if one could count the number of wounds directly attributed to tanks or bayonets. Nonetheless, by simply studying casualty figures, it would be possible

to conclude that gas was not a significant weapon and certainly not, as first envisioned, the war-winning weapon. But this is akin to holding gas up as some sort of idealized agent—the breakthrough weapon that failed to achieve victory. No weapon on the Great War battlefield delivered victory single-handedly: not the infantry, not tanks, not airpower, and not even the artillery. The key to success was the development of a combined-arms attack doctrine.[6] Why should gas be held up to higher standards? The most important role of gas was in combination with other weapons of war.

Furthermore, in order to judge the effect of poison gas, one must go beyond simply attempting to track down gas casualties. That in itself was no easy task, considering that gas victims were difficult to identify and often misclassified and lumped under more general casualty figures. The dead have no tell-tale signs of hacking and coughing; was it a bullet through the lung or phosgene gas that killed a man? It was generally the former that was recorded, even though both contributed to the grim ending. Casualties, however, are not the only way to gauge the effectiveness of weapons in war. It was the disruptive nature of chemical agents, especially after gas shells became abundant in 1917, that gave poison gas its most effective role on the battlefield. Gas exacerbated friction and sewed confusion: from disrupting communications and logistics, to forcing the reevaluation of battlefield tactics, to adding another weapon to the artillery's already formidable arsenal, and to acting as an agent of attrition on the individual soldier, both physically and mentally. Poison gas evolved from a occasional weapon in 1915 and 1916 to a constant and unnerving addition to the battlefield, which paralyzed movement and plagued all soldiers by the last year of the war. Using the two film excerpts and Edmonds' phrase as points of departure, this article will examine the varied roles of gas warfare in the Great War and then highlight specific ways in which where poison gas directly affected the trench soldier.

GAS IN THE GREAT WAR

Most historians know little of poison gas and its role during the Great War. Yet almost all have heard of and read about the first

Gas Clouds Looming: Fighting in a gas environment on the Western Front. (Courtesy National Archives of Canada)

release of chlorine at the second Battle of Ypres in April 1915. After the initial mobile phase of the war had ground to a halt on the Western Front in 1914, barbed wire, interlocking fields of machine-gun fire, artillery support and seemingly massive reinforcements all combined to end mobile warfare and make permanent what were, at first, temporary trench systems. Aware that a two-front war could not be won, Germany needed to break the deadlock. With 80 per cent of the world's chemical industries and some of its most brilliant scientists, the Germans began to experiment with chemical agents.[7] After a handful of unsuccessful attempts to employ tear gases, they settled on chlorine, which was lethal and easy to transport.

the impact of gas is difficult to fully ascertain

Although chlorine was envisioned as a suitable chemical for killing and incapacitating the enemy, the act of using poison gas to exterminate the enemy like vermin was a repulsive thought for many senior German generals. Despite the fact that conventional weapons had cause more than a million casualties in the first year of the war, gas was regarded as an immoral weapon created by scientists—not soldiers—to choke the life out of a defenceless enemy. Nonetheless, its use was perceived as a necessity, since the war of maneouvre had degenerated into full frontal assaults against prepared and entrenched defenders. With gas seeping into the defensive positions where the soldier took shelter, it was hoped that the chemical clouds might drive the enemy out from his trenches. However, without the full support of senior German commanders of the soldiers, the first use of chlorine at Ypres was more of an experiment that might work, but would also, more importantly, act as a diversion to cover the movement of several divisions to the Eastern Front.[8]

With the initial failure of the tear gases and a delay of several weeks in waiting for a proper wind for the release of the chlorine, it came as some surprise to the German High Command that the first release of cloud gas on 22 April was an overwhelming success. Two French divisions, a territorial and a colonial, panicked and fled, leaving the untried 1st Canadian Division on their right in a compromised and untenable position. The effects of the chemical agents were ghastly: victims coughed and choked, weapons were downed as terrified men clutched their constricting throats and tried to draw breath through scalded air-ways. As their lungs were unable to expel the body's natural fluids, badly gassed men literally choked to death, hacking up bloody sputum and yellow bile, while their skin turned greenish and then blue. One Canadian survivor remarked: "It is impossible for me to give a real idea of the terror and horror spread among us by this filthy loathsome pestilence."[9]

Despite the wide-spread panic and apprehension resulting from this terrifying new weapon, a second chlorine attack directly targeted against the 1st Canadian Division two days later did not have the same effect. Some caught in its path still suffocated or were rendered helpless, but most soldiers used water and urine on rags to cover their noses and mouths to protect against the gas; enough survived and had the

Tim Cook

discipline to open fire into the massed ranks of the oncoming German infantry. Nonetheless, the chlorine still killed and maimed. A company report from the 15th Canadian Infantry Battalion described how it was impossible to breathe in the gas cloud, with men complaining of "the effect of having cotton batting in one's lungs.....The effect of the gas was so serious that some died and the remainder were practically useless."[10] Clawing at their throats and gasping through scalded lungs, as one survivor noted years later, "the effect of the gas on us (without respirators) upset us all far more than the shells, or machine guns."[11] Had the Canadians broken or had the Germans thrown more units into the breach, 50,000 British and Canadian troops in the Ypres salient might have been surrounded. It would have been a devastating event. But it failed to come off, as asphyxiated and vomiting Canadians, who were supported by penny-packets of Allied troops, beat off the German infantry who, without respirators themselves, were advancing slowly and tentatively behind their own gas clouds. The lines were stabilized shortly thereafter, but the near loss of the Ypres salient had many suggesting that a "breakthrough" weapon had finally been found. That was not to be the case, and after four more crippling, but not war-winning, chemical releases against British troops, the Germans moved to the Eastern Front where the winds were more in their favour.

That move resulted in a short respite for the troops on the Western Front; the unlucky and poorly-equipped Russians, however, were killed in the thousands. Notwithstanding the chemical slaughter, no further large-scale breakthroughs ever occurred because of gas. Men always survived gas attacks on the flanks; artillery was always there to put up a defensive barrage; and reinforcements could always be found. As a result, the use of gas went through a dormant period in late 1915 and early 1916. It had never been popular with the frontline soldiers, and their distrust was heightened after some well-publicized cases of gas clouds blowing back on troops, as at Loos on 25 September when the British employed chlorine for the first time. Canistered gas released as clouds was thereafter shunted to the periphery, only to be associated with the chemists who spawned it.

Soldiers disliked chemical warfare intensely, and even deadlier gases were soon developed: chlorine was replaced by phosgene and diphosgene, both of which were more lethal and difficult to identify by smell. Because phosgene did not immediately cause burning in the lungs like chlorine, and took some time to affect the body, it was all the more distressing to see a seemingly healthy man break down hours after an attack and begin to wheeze and cough. Phosgene and gases like it inhibited the transfer of water in the lungs. Within hours a victim's lungs would fill up and gassed men could choke up four pints of liquid an hour. Gassed victims became weaker from their ongoing ordeal and were eventually unable to expel the liquid. It was a grisly way to die. As one observer penned: "There, sitting on the bed, fighting for breath, his lips plum-coloured, his hue leaden, was a magnificent young Canadian past all hope in the asphyxia of chlorine...I shall never forget the look in his eyes as he turned to me and gasped: 'I can't die! Is it possible that nothing can be done for me?'" With images like that, it is no wonder that gas was perceived as a weapon of horror.[12] But because the Germans, British and French were now unleashing gas-cloud attacks with specialized gas units by early 1916, few continued to see gas as immoral. Nevertheless, the most common victims of poison gas—the "poor bloody infantry"—continued to view it with caution and fear.

most historians know little of poison gas and its role during the Great War

Yet large gas-cloud attacks were infrequent affairs. The thousands of canisters needed for a dense cloud were difficult to deploy in the front lines, and infantry did not like being positioned near them as stray shelling might puncture the containers and release gas into their trenches. Even when the gas was released, it was the infantry who took the full brunt of the enemy's angry retaliation, not the special gas companies which quickly withdrew from the front. The introduction of the gas shell changed the tactical use of chemical weapons. At the bloodbath of Verdun, which raged from February to November 1916 and resulted in over 700,000 casualties, the French first used gas shells, while the Germans perfected them. Unlike the unpredictable gas clouds, gas could now be delivered to a specific target with relative assurance of safety for one's own troops, and staff officers began to see the potential of using chemical shells to support and augment their fire plans. Although soldiers had been issued fairly effective respirators by early 1916, the nearly silent fall of gas shells within high-explosive bombardments caught many men unaware. It took only a few chemical shells to produce casualties and provoke large numbers of soldiers to don their respirators.

The steady trickle of gas-induced casualties aside, the wearing of a respirator—even under ideal conditions—was debilitating to morale. Soldiers could barely see beyond ten yards in these awful contraptions, and there was always the fear that the enemy was sneaking up on you when you were half-blind. Respirators isolated soldiers and forced them to confront their fears alone, away from the sympathetic glance of a mate and only with the soft hiss of one's own breath in one's ears. With the intense felling of suffocation resulting from even the least mild movement; with spittle and vomit filling one's mask; and with the constant apprehension that your respirator's filter might have been damaged, these were all factors that made poison gas a useful and effective weapon, aimed to create casualties and severely affect morale. In addition to the effect on morale, breathing air through a charcoal filter was difficult. Soldiers quickly

became exhausted from their belaboured breathing, which did not nearly allow enough oxygen into the lungs and left men unfit from even mild physical exercise. There was a reason why gas was employed increasingly as the war progressed, its use doubled each year until 1917 and quadrupled from 1917 to 1918 . Poison gas became an essential weapon in a war that was bent on a policy of attrition.

New gasses were developed to make a frontline soldier's life. The German blue cross shells, introduced in early 1917, contained fine dust and gases which, when inhaled, caused intense coughing, sneezing and vomiting. Soldiers who removed their respirators subsequently fell victim to the follow-up lethal gas shells. The use of high explosive and gas shells in mixed-projectile bombardments caught men when they were most vulnerable. With high explosive shells blowing men left and right, and everyone frantically searching for cover, reaching for one's respirator was not always the highest priority. Furthermore, within the cacophony of a bombardment, the soft popping sound of the chemical shells was usually lost. Even if a soldier was trained well enough to identify gas during a bombardment, it was often recorded that respirators were frequently ripped from faces by the force of shell bursts. The twinning of high explosive and gas shells became an efficient method of causing casualties.

the wearing of a respirator—even under ideal conditions—was debilitating to morale

When the Germans unleashed mustard gas in the summer of 1917, they forever changed the nature of chemical warfare. In the first three weeks after its use, and during the period of preparation for the upcoming British Flanders offensive, there were over 14,000 gas casualties in the BEF (British Expeditionary Force)alone[13]. Mustard gas not only burned lungs like conventional gases, but also the skin. Even low doses of the vapour were enough to cause suppurating blisters and temporary blindness. Here was the terror weapon that seemed to negate all that soldiers had been told up to this point in the war—with a respirator you will be safe. Mustard gas burned and blinded, but it was also a persistent compound. Unlike chlorine and phosgene which dissipated within minutes or hours depending on weather conditions, mustard gas remained active, lying dormant in the mud and water of the battlefield. Days or weeks later, a soldier moving through the area, especially after the sun had warmed the ground and released the vapours, could fall victim to mustard gas, going blind, suffering burns or developing hacking coughs and subsequent bronchial infections.

Mustard gas seemed to attack at random and there were numerous cases of infected soldiers unknowingly harming their comrades from the residual effects. In the winter especially, one contaminated man, with mustard gas residue on his clothes and boots, could infect a whole dugout of closely-pressed men huddled together for warmth.[14] As well, doctors and nurses were constantly being burned and rendered nauseous from operating on gassed men. Forget about the old sporting nature of gas "not being cricket," this was a chemical plague that could pollute the ground for days on end, where men could fall victim at the latrine or while they slept.

By the battle of Passchendaele in the late summer of 1917, the Germans understood the properties of mustard gas and the advantage of shelling forward areas and suspected jumping off points to make them uninhabitable, especially, as one report disseminated by the BEF indicated, "during the night before an expected attack."[15] Gas became part of the German defensive doctrine, with pre-emptive strikes by gunners who were not only to inflict casualties, but also to force the soon-to-be attackers to wear their respirators for hours and thus erode their fighting efficiency. Mustard gas was not as lethal as the lung gasses, but it resulted in a far higher number of minor casualties. Despite its proven battlefield success, the Allies were not able to master the production of mustard gas until the last months of the war, and they continued to rely on lethal lung gasses. The psychological effects were still debilitating and one captured letter from a German infantryman of the 99th Reserve Infantry Regiment frankly noted that: "We are in a state of readiness, night and day...There is nothing more terrible than gas."[16]

Throughout the last two years of the war, gas shells were not only directed against soldiers, but also the animals in the lines of communication. Horses were "killed off like flies" from gas, wrote Sir Basil Liddell Hart.[17] Those that survived were weakened and succumbed to an assortment of other maladies arising from their chemical hardships. As horses and mules were forced to trudge through mustard gas-infected roads, the effects were particularly gruesome and resulted in continuous burns and infections to animals' legs and hooves.[18] The gas environment played a sad part in the already low life expectancy of a horse, which, as one officer in the Canadian Army Veterinary Corps noted, was approximately six days.[19] Poison gas was an effective killer of transport animals and could render the logistical system inoperable for significant periods of time.

In addition to disrupting the lines of communication, gas was particularly effective against enemy gunners. Although there were sometimes hard feelings among the infantry who felt that the artillery had unwritten rules against bombing one another and instead focussed their attention on those in the front lines, the gradual evolution of an effective counter-battery doctrine required the gunners to target one another. The key to stopping an assault or in assisting one's own infantry in crossing no-man's-land was to disrupt the enemy's rate of fire. Chemical counter-battery work was an effective means of harassing

Tim Cook

the enemy . No matter the training of an artillery gun detachment, the wearing of respirators greatly interfered with the setting of shell fuses and the rate of fire. One has little trouble in conjuring up images of gunners, stripped to the waist, feeding their guns in a never-ending stream of shells. With mustard gas affecting those parts of the body that were bare or moist, like the underarms, backs, legs and genitalia, it is no wonder that gunners feared a chemical deluge. While regular shells could not always find camouflaged enemy batteries, blanketing whole areas in gas became an effective method of disrupting rates of fire. "Gas was Fritz's most effective weapon against the artillery," recorded one artillery regimental history.[20] So too did the Allied gunners employ gas to overwhelm the German gun detachments, and instructions issued to all batteries in the BEF noted that poison gas was often more useful than high explosives in quelling fire from fortified defensive positions or unseen enemy artillery.[21] Counter-battery work progressed throughout the war and became the most scientific branch of the artillery. And within this technically-advanced branch, scientific gunnery, poison gas became an essential tool with which to target and disrupt the enemy's gunners.[22]

Having honed their offensive artillery tactics against the Russians during the 1917 Eastern Front campaigns, the Germans implemented them on the Western Front. Throughout the ambitious German March offensive of 1918, specialized assault troops using infiltration tactics relied heavily on gas to sew confusion in the British and French ranks. Gas shells were used to isolate defenders and set up chemical barriers in order to bypass areas of resistance. Chemical shoots were also a significant source in eroding combat efficiency, and contributed to the lassitude exhibited by some defenders. Lieutenant-Colonel Harold Hartley of the British Gas Services noted in a conference of Chemical Advisors during the later stages of the offensive that one third of the BEF's casualties were from gas.[23] The gas war, though, was not one-sided. While the Germans employed chemical weapons in their shock attacks, the British and French lashed the follow-up German support troops with heavy doses of gas. Enveloping supplies, ammunition, reinforcements, animals, and artillery pieces in a blanket of gas, left the already over-extended *frontsoldaten* more vulnerable. As part of the Allied combined-arms defensive doctrine, the use of gas played an important part in unsettling the German lines of communications, a key reason why the March offensive ultimately failed.

With the loss of hundreds of thousands of soldiers to injury and death during the March offensive for little, if any, gains of strategically important territory, the German Armies were forced to revert to the defensive in the West. There would be no respite. Commencing with the offensive at Amiens on 8 August, the Allied armies pounded away at the Germans all along the line. The desperate defenders, now outnumbered in men and shells, relied heavily on poison gas to saturate large areas of the front in the hope of weakening Allied soldiers' fighting efficiency, inducing exhaustion and slowing the steady advance. The battles of the "last 100 days" were continually fought within this total gas environment. The considerable stress of moving forward under fire was exponentially increased by doing it nearly blind, alone and straining for breath; and the terror of defending trenches beneath a storm of steel and chemicals was unimaginable.

Although chemical shells were employed in great numbers during the "last 100 days," gas was still a chancy weapon, with some soldiers encountering it without fail while others had barely had little need for a respirator on quieter fronts. In other cases, weather conditions or weak concentrations of chemical shells reduced the effectiveness of gas. Nevertheless, poison gas had become an integral part of all offensive tactics, and by 1918, chemical shells consisted of between 25 and 40 per cent of all artillery projectiles.[24] As an American report prepared after the war candidly noted: "In the last two months gas warfare began to approximate the pattern of HE fire—continuous gas shelling punctuated by bombardments....And it was then that gas proved its extraordinary superiority over HE in producing mental as well as physical casualties."[25]

poison gas was an effective killer of transport animals and could render the logistical system inoperable for significant periods of time

GAS AND THE TRENCH SOLDIER

Although historical secondary sources on the war are strangely quiet on the use and effect of gas, one need only examine the archival primary sources of the armies of all belligerent nations to see the progression of poison gas from gradual acceptance to full incorporation into attack doctrines. Not simply used in big battles or massive canister blow-offs, poison gas was a constant, pervasive weapon by the last two years of the war. However, the effect of gas was primarily to wound soldiers and reduce their efficiency, rather than to kill them gas was primarily a casualty-causing and efficiency-reducing agent rather than to kill them. The untrained, uneducated, and unlucky were most likely to fall victim to lung gases like phosgene. Despite being delivered by shells, canisters and mortar-like projectors, with good training and efficient respirators, most soldiers were able to protect themselves against the lung gasses. With its capacity to blind and blister, mustard gas was entirely different. It could strike at anyone, and even the best trained Allied armies had a steady flow of mustard gas victims by the last year of the war. That did not mean the German armies were unaffected by gas, and from 1 January to 30

September, 1918 the Germans suffered 58,000 recorded cases of gas poisoning—a grim indicator of the stock placed on gas by the Allies as well as Germany's lack of materials to continually develop effective respirators.[26]

Gas was more than a simple harassing agent sprinkled over the front. It was used against the lines of communication, enemy forming-up points, and in planning counter-battery fire. Chemical attacks were as common as they were flexible in achieving tactical success. Notwithstanding the use of gas and its success in augmenting the more traditional shrapnel and high explosive bombardments, the effectiveness of gas can best be assessed through its affect on the individual soldier. It was the psychological strain of poison gas on soldiers, with the corresponding reduction in combat efficiency and morale, which was the most effective and insidious result of gas. To simply look for casualty figures caused by poison gas is to miss its primary role as an agent of attrition.

All armies understood that gas eroded morale. It was necessary, therefore, to assist soldiers in this continuously pervasive gas environment. After the first gas attack at Ypres, the British and French reacted quickly by issuing respirators to support their soldiers at the front. Initially, these respirators were next to useless and their prime role might best be described as psychological. It gave a sense of protection even though few believed that soldiers could stand the strain of further gas attacks.[27]

It was also quickly found that there was much more to combatting the threat of poison gas than simply handing a soldier a respirator and whispering "best of luck, chum." It was essential that soldiers be trained to understand this bewildering weapon. Protecting oneself against gas required constant training education and drill until it became second nature. Unfortunately, this is not usually considered the most interesting aspects of war. The Great War on the Western Front has usually been measured by the mile-stone battles: 1st, 2nd, and 3rd Ypres, the Somme, Verdun, the March Offensive, and the Last Hundred Days. Yet it was the time between those battles, filled with constant training, drill, and tactical evolution, that toughened up soldiers and made it possible for the troops to carry through with the "big pushes." The greater emphasis on gas training throughout the war was a testimony to the necessity of teaching soldiers the skills to survive the gas environment, and not simply assuming they would cope because they had been issued respirators or gas capes.[28] This continuous training at increasingly advanced levels also indicates that gas was seen by those at the time—if not historians since—as a dangerous weapon that needed careful counter-measures.

All armies devised anti-gas services to inculcate effective defensive measures against gas. Their pedagogical approaches were diversified, but education was the key. Soldiers were instructed on how to identify gasses, how they could be wounded, and how they must protect themselves from the worst effects of chemicals. It was not always successful as the bewildering array of chemicals could confuse even the most experienced of soldiers. Drill was the second component, and soldiers were taught that speed in donning respirators was essential. After that, soldiers were forced to march, train and even play games with respirators attached. Photographs of respirator-clad men kicking around a football were surely one of the signs that the Great War was like no other before it. Yet both enlisted men and officers had to build up their stamina by wearing their respirators for hours on end. No one ever became comfortable in these stifling things, but at least they were able, for the most part, to keep fighting. To assist the men at the front, bells, horns, and gas klaxons were employed to provide an overall alert zone at the front. More than a few soldiers cursed chemical warfare and nervous sentries who would awaken half a division at the sight of night-fog. Finally, threats and fear were lavishly directed to raw recruits and veterans alike. Regimental. 4.6 officers were held accountable if their units suffered high numbers of gas casualties, as it was perceived as a failure in discipline; at the low end of the hierarchy, individual soldiers were often threatened with a ghastly fate if they did not comply with firm anti-gas measures. It was not uncommon for new recruits to be taken through hospitals to view gassed men—as one instructor noted, it "furnished a great stimulus to general gas training."[29]

The anti-gas services, which were firmly established in all armies by the beginning of 1916, tried to stay one step ahead of the enemy. They were not always successful, but the structure was at least in place to provide for effective training to protect against widespread panic and disaster should new gasses be unveiled on the battlefield. Good units were still worn down by a steady trickle of gas casualties, not to mention the countless problems of friction and the reduction of combat efficiency among their soldiers. But those with poor training, like the inexperienced American troops, were savaged. By the Armistice, more than one-fourth of the American total casualties were a result of gas.[30] Nevertheless, in either well or poorly-trained units, all soldiers felt the strain of poison gas.

The very fact that gas polluted the air men breathed carried grim connotations. There were very few before the war who had not been touched in some way by the "white death"—tuberculosis (or consumption), the great killer of the nineteenth century.[31] With a similar ravaging of the body through the lungs, gas was often associated with the contagious disease and carried the same unclean imagery. With post-war gassed soldiers housed in similar sanatoriums where they hacked and wheezed through their remaining, usually short lives, the fear of poison gas extended deeply into the consciousness of all survivors.

Fear in war is not always rational, and gas, like the terrible artillery bombardments, failed to give the soldier a fighting chance against the enemy.[32] Canadian Medical Officer R.J. Manion described the powerful psychological effects of gas:

> *As a result of this gas attack many of our men had to go to the hospital, and those of us who escaped were depressed for several days. Gassing weakens the morale of troops. Men do not fear to stand up and face an enemy whom they have a chance of overcoming, but they do hate dying like so many rats in a trap, when death is due to a gas against which they cannot contend....*[33]

The role of gas should not be overstated. High explosive shells were the true killers of the war, and men were buried alive or ripped limb from limb within the blast radius. By all accounts, a drum-fire heavy bombardment caused paralysing fear, but, while the effect of high explosives has rightly been given its due in much of the literature about morale, soldiers, and psychology, gas has not. Years after the war, one man who lived through the gas environment wrote that "it is a hateful and terrible sensation to be choked and suffocated and unable to get breath: a casualty from gun fire may be dying from his wounds, but they don't give him the sensation that his life is being strangled out of him."[34] To overlook the effects of poison gas or assume that its only contribution to war-fighting was its million casualties, is to severely misconstrue the varied use of poison gas on the battlefield.

Gas was an important weapon in the arsenals of all nations and an essential agent in wearing down the morale and fighting efficiency of soldiers. The chemical plague was a psychological strain, which left men in a permanent sense of unease. With every puddle an imagined trap, with every patch of ground possibly containing a substance that burned and blinded, it left already exhausted soldiers with no rest, physically and mentally, from the horrors of war. "Gas condemned the soldier to a state of unendurable helplessness," one modern writer noted.[35] This is overstating the case, but hollow-eyed from lack of sleep, afflicted with continuous headaches, bouts of vomiting and voices raspy from minor gassings, infantrymen in the gas zone began to take on a zombie-like appearance. The effects on morale would manifest themselves later as the strain continued day in and day out. But such gas-induced mental casualties were initially overshadowed by the frightful physical losses. After the war, the 1922 British Shellshock Committee received testimony from several medical officers that poison gas had been a factor in exacerbating psychological casualties. As one British medical officer observed: "a whole battalion will go almost panicky with gas, and they are continually living in such a stress that I do say that fear plays a large part in the emotions....Gas was a potent cause of anxiety neurosis in the majority of cases."[36]

Chemical substances that scalded lungs, blinded eyes, and burned genitals were seen by many as something beyond the limits of legitimate warfare. And with soldiers having too much time to ponder in the mind-numbing boredom of trench warfare, it should not be surprising that rumours constantly circulated. Stories of new, deadlier, choking gases that could penetrate respirators were passed up and down the lines. There was always a rumour circulating about how someone had seen some poor soldier in a neighbouring regiment who had been poisoned with his mask on, curled up in the foetal position or sitting up straight in a chair. It was not implausible that those damned scientists had perfected another new gas! Further tales of gas shells that fired out death rays or brain-damaging electronic waves raised concern among senior officers. All of these were tracked throughout 1917 and 1918 by the French Gas Services, whose report to the British armies warned about the effects of gas-induced rumours on morale.[37] The French blamed it on German saboteurs; the truth was that it originated with normal men who were frightened of gas and what the next shell would bring.

Supporting Raids: Gas projectors used at Hill 70, August 1917. (Courtesy National Archives of Canada)

the anti-gas services...tried to stay one step ahead of the enemy

Respirators were not, as some historians have concluded, the solution to combatting the gas war. As one soldier remarked:

> *We gaze at one another like goggle-eyed, imbecile frogs. The mask makes you feel only half a man. You can't think. The air you breathe has been filtered of all save a few chemical substances. A man doesn't live on what passes through the filter—he merely exists. He gets the mentality of a wide-awake vegetable.*[38]

Gas attacks would have been an exhausting experience for anyone, but for the soldiers at the front, bone-weary from battle, it was a crushing morale factor.[39] Acknowledging the debilitating role of gas, one post-war analysis of two American divisions that fought in July and September 1918 noted: "battle fatigue quickly followed intensive gas shelling."[40] As war-weariness set in after months of continuous combat, gas eroded the soldiers' health and morale until they were little more than shadows of their former selves. A captured German diary recorded that "we

have again had many casualties through gas poisoning. I can't think of anything worse; wherever one goes one must take one's gas mask with one, and it will soon be more necessary than a rifle. Things are dreadful here."[41] And for some, that sense of dread never subsided. "Since 1916, the fear of gas obsessed me: any unusual smell, even a sudden strong scent of flowers in a garden, was enough to send me trembling," wrote Robert Graves, a survivor of the effects of gas.[42] Gas became the ultimate symbol of the trench war in which it was conceived—it was a tactical weapon of attrition, used to wear down the enemy physically and mentally, and its use constantly increased throughout the war.

Why then have subsequent generations of historians failed to portray adequately the effects of gas in war? Certainly there were clues from the soldiers themselves. Any reading of their letters, diaries or post-war memoirs, gives many indications about the effect of gas on them and their companions. Nor can one deny the effect of such art as that of painter John Singer Sargent, whose powerful work, *Gassed*, captured the terrible effects of mustard gas. The impact of *Gassed*, which depicts depicted men trudging to the rear, blinded, eyes covered in cloth, one hand on the man in front, was partially so evocative for soldiers because it was a common sight by 1918. And, of course, perhaps the most poignant war poet of his generation, Wilfrid Owen, left a compelling word-picture of the effects of poison gas in his poem "Dulce et decorum est":

...Gas! GAS! Quick, boys!—An ecstasy of fumbling
Fitting the clumsy helmets just in time,
But someone still was yelling out and stumbling
And flound'ring like a man in fire or lime...
In all my dreams, before my helpless sight
He plunges at me, guttering, choking, drowning.
If in some smothering dreams, you too could pace
Behind the wagon that we flung him in,
And watch the white eyes writhing in his face,
His banging face, like a devil's sick of sin;
If you could hear, at every jolt, the blood
Come gargling from the froth-corrupted lungs,
Obscene as cancer…[43]

"A Goggle-Eyed Booger." Gas protection devices evolved considerably during the war. The "P-Helmet" added to the nightmarish quality of gas warfare. It also not very effective. (Courtesy National Archives of Canada)

the soldier's perception of gas also changed during the war

That there is such abundant evidence of the devastating impact of gas warfare in both private and public war records and in contemporary publications makes it more bizarre why historians have ignored the role of gas. Perhaps the answer lies in the notion of morality. Gas was initially portrayed in propaganda as an immoral weapon of extinction: those caught in its grasp were to be asphyxiated like insects, rather than die as men.

Within a year, though, the commanders on both sides had buried their earlier objections to the immorality of gas warfare in their desperate bid to find a means to break through the trench deadlock, and defend their own positions by gassing the attacking enemy. For the men in the firing line, the soldier's perception of gas also changed during the war and very few of them still saw it as an immoral weapon by 1917. After the war, however, gas was again characterized as an insidious weapon, with a strong peace movement attempting to have it banned.[44] The stigma associated with gas was a strong one. As Harold Hartley, a former British scientist and gas officer noted, "gas has very few friends, people are only too ready to forget it."[45] Several post-war commentators suggested that the portrayal of gas as a weapon of mass destruction was odd, for gas killed only about 3 per cent of its victims in comparison to 25 to 30 per cent for conventional weapons. Nonetheless, the popular image of gas remained one of indiscriminately suffocating all in its path, and rendering the ground a wasteland.

The key to understanding the Great War experience is to listen to what the soldiers were trying to tell us through their letters, diary entries, or post-war memoirs. Their words suggest, when combined with the available official archival records, that it is a fundamentally flawed argument to suggest that poison gas was rendered ineffective after respirators were issued. Having a flimsy layer of impregnated cloth and charcoal between oneself and lung-ravaging gases, or worse, blistering agents, was scant comfort. Respirators may have saved lives, but they did not quell fear. However, respirators did reduce fighting efficiency and increase battlefield friction. And they seem to have misled many historians in understanding the nature of gas warfare and the challenge that the chemical environment posed for the men who were forced to fight

through it.

* * *

It is worth returning to the bug-eyed, seemingly unearthly soldier from Oh, What a Lovely War. There was no avoiding gas by 1918, and nor did the Great War soldier have the luxury, as the four singing, soft-capped soldiers from 1915 cheerfully advocated, of running away. Gas warfare had become a constant blight on the face of battle, and even well-trained units suffered heavy casualties, as they were forced to fight through the chemical clouds. To misconstrue the role of poison gas on the Great War battlefield is to fail to understand the complex and inter-related weapon systems that underpinned all attack doctrines by 1918. More grievous, though, to downplay or blur the effects of poison gas is to deny the fortitude of the men who underwent incredible physical hardship and psychological trauma when forced to fight through the nightmarish conditions of the only continuous chemical battlefield in human history.

ABOUT THE AUTHOR...

Mr. Tim Cook has published extensively in Canadian and international academic journals, and is author of No Place To Run: The Canadian Corps and Gas Warfare in the First World War (University of British Columbia Press, 1999), which won the 2000 C.P. Stacey award for the best book in Canadian history. He is the First World War historian at the Canadian War Museum and is working on the permanent exhibitions for the new museum that is to open in May, 2005.

ENDNOTES

1. A version of this paper was presented at the Clio in Ascendence conference at Northampton, England, 1 August 2001. The author would like to thank Sarah Klotz and Terry Cook for their careful editing of the text.
2. There are a number of important essays in Brian Bond, ed., *The First World War and British Military History* (Oxford: Clarendon Press, 1991), which speak to the myths surrounding the war. Also see Jay Winter, *Sites of Memory, Sites of Mourning* (Cambridge: University Press, 1995); Jonathan Vance, *Death So Noble: Memory, Meaning, and the First World War* (Vancouver: University of British Columbia Press, 1997); Hugh Cecil, *British War Novelists in Hugh Cecil and Peter Liddle*, eds., *Facing Armageddon: The First World War Experienced* (Leo Cooper, 1996).
3. For the downplaying of poison gas in general histories of the Great War, see the recent works by Keegan or Ferguson; important texts that look at the evolution of fighting on the Western Front by Travers and Griffiths also fail to understand the varied role of poison gas. John Keegan, *The First World War* (Key Porter Books, 1998); Niall Ferguson, *The Pity of War* (Basic Books, 1999); T.H.E. Travers, *How the War Was Won* (London: Routledge, 1992); Paddy Griffiths, *Battle Tactics of the Western Front: The British Army and the Art of Attack* (New Haven: Yale University Press, 1994).
4. J.E. Edmonds and R. Maxwell-Hyslop, *Military Operations, France and Belgium, 1918* vol. 5, *History of the Great War in Public Documents series* (London: Macmillan, 1935-1947), p.606, as quoted in Edward Spiers, *Chemical Warfare* (Chicago: University of Illinois Press, 1986), p. 33.
5. Ludwig Fritz Haber, *The Poisonous Cloud*, (Oxford: Clarendon Press, 1986); Donald Richter, *Chemical Soldiers: British Gas Warfare in World War 1* (Kansas: University Press of Kansas, 1992).
6. Shelford Bidwell and Dominick Graham, *Fire-Power: British Army Weapons and Theories of War, 1904-1945* (London, 1982); Bill Rawling, *Surviving Trench Warfare: Technology and the Canadian Corps* (University of Toronto Press, 1992); Paddy Griffith, *Battle Tactics of the Western Front* (Yale University Press, 1994); Albert Palazzo, *Seeking Victory on the Western Front: The British Army and Chemical Warfare in World War I* (Lincoln: University of Nebraska Press, 2000).
7. Augustin M. Prentiss, *Chemicals in War* (New York: McGraw-Hill Book Company, 1937) 637; Ulrich Trumpener, *The Road to Ypres: The Beginnings of Gas Warfare in World War I*, *Journal of Modern History* 47 (September 1975).
8. Frederick Brown, *Chemical Warfare: A Study in Restraints* (Princeton: Princeton University Press, 1968),chapter 1; Holger Holwig, *The First World War: Germany and Austria-Hungary, 1914-1918* (London: Arnold, 1997), pp. 168-72.
9. H.H. Mathews, *An Account of the Second Battle of Ypres, April 1915*, Canadian Defence Quarterly 1,3 (1924) 38.
10. National Archives of Canada (NA), MG 30 E46, Richard Turner papers, vol. 1, file 4, Report of No. 3 Coy. 15 BN. *48th Highlanders 20-24 April 1915—2nd Battle of Ypres*.
11. NA, Records of the Department of National Defence, RG 24, vol. 1738, DHS 3-17 (vol. 2), H.E. Lloyd Owen to Duguid, 14 Aug 1925.
12. John Ellis, *Eye-Deep in Hell* (London: Croom Helm, 1976), p. 66.
13. For gas casualties and the initial shock of mustard gas to the British army, see Stockholm International Peace Research Institute, *The Problem of Chemical and Biological Warfare: Volume I. The Rise of CB Weapons* (Stockholm: Almquist & Wiksell, 1971), p. 146; Sir W. G. Macpherson, et. al., *Official History of the War: Medical Services Diseases of the War, Volume II* (London: 1923), pp. 282-294.
14. NA, Records of the Department of Militia and Defence (RG 9), III, v. 945, file 5-3, *Mustard Gas*, pamphlet issued by First Army, May, 1918.
15. NA, RG 9, v. 4032, Folder 1, File 14, G.941/23-11; NA, RG 9, vol. 3976, Folder 5, File 12, *Notes on Enemy Gas In Ypres Area*.
16. King's College, London, Sir Basil Liddell Hart Collection, C.H. Foulkes papers, 6/10, *Morale Effect*.
17. Basil Liddell Hart, A History of the First World War, 1914-1918 (London: Little, Brown and Company, 1972), p.319.
18. Lorraine Jordens, V*eterinarians in World War One*, Alberta History 41, 2 (Spring 1993), p. 23; D.S. Tamblyn, *The Horse In War* (Jackson Press, 1930), p. 33.
19. NA, MG 30, E14, French papers, vol. 1, file 4, Revised Copy of History of CAVC (Canadian Army Veterinary Corps), 20.
20. D.C. MacArthur, *The History of the Fifty-Fifth Battery, C.F.A.* (Hamilton: H.S. Longhurst, 1919), p. 18.
21. King's College, Foulkes papers, 6/28, *Instructions on the use of lethal and lachrymatory shells, March 1918*.
22. See David T. Zabecki, *Steel Wind: Colonel Georg Bruchmuller and the Birth of Modern Artillery* (Westport: Praeger, 1994); A.G.L. McNaughton, *Counter-Battery Work, Canadian Defence Quarterly, vol. III, no. 4*, (July 1926); Albert P. Palazzo, *The British Army's Counter-Battery Staff Office and the Control of the Enemy in World War I*, Journal of Military History 63 (January 1999), pp. 55-74.
23. NA, RG 9, vol. 3081, File G-13-36 pt. 3, *Anti-Gas Conference for Command Chemical Advisors*, 22 April 1918, 3.
24. Hartley argued that in July 1918, German ammunition dumps contained 50 per cent gas shells. The dumps captured later in the year contained from 30 per cent to 40 per cent. Harold Hartley, *A General Comparison of British and German Methods of Gas Warfare*, *Journal of the Royal Artillery* (February, 1920), p.498; Victor Lefebure, *The Riddle of the*

Rhine (London: W. Collins Sons & Co. Ltd, 1921), pp. 77-80. By the Armistice chemical shells made up 35 per cent of French ammunition supplies, 25 per cent British and 20 per cent American (and a 25 per cent ratio was planned for 1919). Spiers, *Chemical Warfare* 26; Alden Waitt, *Gas Warfare* (New York: Duell, Sloan and Pearce, 1942) p.100; American statistics from Charles E. Heller, *Chemical Warfare in World War 1: The American Experience, 1917-1918 Leavenworth Papers* no. 10, (Kansas: Combat Studies Institute, 1984) p. 59; British statistics from Albert Palazzo, *Tradition, Innovation, and the Pursuit of the Decisive Battle: Poison Gas and the British Army on the Western Front, 1915-1918* (PhD diss., Ohio State University, 1996), pp. 430-5.

25. NA, RG 24, vol. 20543, file 990.013 (D11), *U.S. Army Chemical Corps report on 26th Division*, 69.

26. Rudolph Hanslian, *Gas Warfare: A German Apologia*, Canadian Defence Quarterly VI.1(October 1928), p. 100.

27. For the development of British respirators in the war, see Tim Cook, *Through Clouded Eyes: Gas Masks in the First World War*, Bulletin of Material History 47 (Spring 1998).

28. See Tim Cook, *Creating Faith: The Canadian Gas Services in the First World War*, Journal of Military History, 62 (October 1998), pp. 755-86, for an exploration of these issues.

29. Heller, *Chemical Warfare*, p. 58.

30. For American gas casualties, see Heller, *The Peril of Unpreparedness*. See the studies by the U.S. Army Chemical Corps Historical Office, The 26th Division East of the Meuse, September 1918 and The 79th Division at Montfaucon, October 1918, for examples of two divisions that were crippled by the German use of poison gas against their troops. The reports are held in files 990.013 (D11) and 990.013 (D14), NA, RG 24, volume 20543.

31. C. Stuart Houston, R.G. Ferguson: Crusader Against Tuberculosis (Toronto: Hannah Institute and Dundurn Press, 1991) p. 54; A.F. Miller, *The New Knowledge of Tuberculosis*, Canadian Medical Association Journal 50 (March 1944); Darlene J. Zdunich, *Tuberculosis and the Canadian Veterans of World War One* (MA Thesis, University of Calgary, 1984), pp. 69-70.

32. Holmes makes the argument in his fascinating book on the soldiers' experience in battle, that the inability to strike back at an enemy during a bombardment—H.E. or gas—is one of the characteristics that made shelling so damaging to morale. Richard Holmes, *Firing Line* (London: Pimlico, 1985)p. 29.

33. R.J. Manion, *A Surgeon in Arms* (New York: Doran, 1918)p. 79.

34. As quoted in Haber, *The Poisonous Cloud* p. 292.

35. Geoff Dyer, *The Missing of the Somme* (London: Penguin Books, 1994) p. 47-8.

36. British Army, Report of the War Office Committee of Enquiry into *Shell-Shock* (London, 1922) p. 67.

37. NA, RG 9, vol. 3982, Folder 3, File 7, *Report on the Periodical Outbursts of Reports Announcing Extraordinary Discoveries Made by the Enemy*. 2; See Lefebure, *The Riddle of the Rhine*, pp. 117-119, for another examination of the rumours.

38. NA, Records of the Canadian Broadcasting Corporation, RG 41, 78th Battalion, F.G. Thompson, 1/8; *Winter, Death's Men*, p. 124.

39. See Anthony Kellett, *Combat Motivation* (Boston: Kluwer-Nijhoff, 1982) pp. 126-129 and Sir W.G. Macpherson, et.al., *Official History of the War: Medical Services Diseases of the War, Volume II*, (London: 1923) p. 258, on this point.

40. Brown, *Chemical Warfare*, pp. 36-7.

41. Heller, *Chemical Warfare*, pp. 22-23.

42. Robert Graves, *Goodbye to All That* (London: Penguin Books, 1929), p. 220.

43. As quoted in Martin Gilbert, *The First World War* (New York: Henry Holt and Company, 1994), pp. 352-3.

44. For the postwar debate over the morality of chemical weapons, see Tim Cook, *Against God-Inspired Conscience: Perceptions of Gas Warfare as a Weapon of Mass Destruction, 1915-1939*, *War & Society*, 18, 1 (May 2000), pp. 47-69; and Hugh R. Slotten, *Humane Chemistry or Scientific Barbarism? American Responses to World War 1 Poison Gas, 1915-1930*, The Journal of American History (September 1990), pp. 476-98.

45. Harold Hartley, *A General Comparison of British and German Methods of Gas Warfare*, Journal of the Royal Artillery, (February, 1920), p. 492.

46. For this postwar debate, see Robin Higham, *The Military Intellectuals in Britain: 1918-1939* (New Jersey: Rutgers University Press, 1966), pp. 46, 69-70, 186; J.F.C. Fuller, *War and Western Civilization, 1832-1932* (New York: Books for Libraries Press, 1969), pp. 234-5; Basil Liddell Hart, *Thoughts On War* (London: Faber and Faber

Primary Movers also Required Protection. A member of the Canadian Army Veterinary Corps demonstrates anti-gas protection for riders and their mounts in 1918. (Courtesy National Archives of Canada)

Purple Haze:

Joint Planning in the Canadian Forces from Mobile Command to J-Staff, 1975-1991 (Part 1)

by Sean M. Maloney, Ph.D.

The problems of allied planners were complicated by the appearance of various monarchs in the field, usually surrounded by a vast array of their own private advisors. Although the monarchs normally refrained from exercising their authority over the nominal command, they had to be briefed on plans, their objections countered, and even their advisors had to receive a hearing...[at Austerlitz this] moved even the politic Swartzenberg to complain that "it is really inhuman what I must tolerate and bear, surrounded as I am by feeble-minded people, eccentric projectors, intriguers, asses, babblers, and niggling critics."[1]

-Gunter E. Rothenberg, *The Art of War in the Age of Napoleon*

INTRODUCTION

Purple Haze is the first part of a two-part series examining the origins and antecedents of the J-Staff, the primary Canadian Forces strategic planning and coordination organ. Between 1964 and 1968, Minister of National Defence Paul Hellyer unified the existing armed services (the Royal Canadian Navy, the Army, and the Royal Canadian Air Force) and created the Canadian Armed Forces. The three service headquarters were disposed of and replaced by a Canadian Forces Headquarters. CFHQ eventually was merged with the civilian Department of National Defence into a National Defence Headquarters. Unification was the law of the land, and the leaders of the Canadian Armed Forces struggled to adapt to it.

In 1990, after a decade of failed exercises and operations, with native unrest and a looming war in the Persian Gulf, Chief of the Defence Staff John DeChastelain authorized his Deputy Chief of the Defence Staff, Lieutenant-General David Huddleston, to form a Joint Staff (commonly called the J-Staff) within the unified National Defence Headquarters. This was done so that the Canadian Armed Forces could react effectively to the crises and provide the Government of Canada appropriate responses to fulfill Canadian global objectives, something the existing National Defence Headquarters was incapable of doing. By 1992, the J-Staff was and remains a permanent part of the Canadian defence establishment.

This study can in some ways be considered a sequel to the previous two-part series on Mobile Command that appeared in the Summer and Autumn 2000 issues of *The Army Doctrine and Training Bulletin*. As before, the objective of this series is to provide insight into a sometimes hidden aspect of the Canadian Army's role in the joint planning processes and to demonstrate once again that the actions of today and tomorrow are firmly rooted in the past.

the objective of this series is to provide insight into a sometimes hidden aspect of the Canadian Army's role in the joint planning processes

WHY SHOULD WE BE CONCERNED ABOUT JOINT OPERATIONS AND PLANNING?

Prior to 1945, military operations were generally grouped into either declared large wars between established powers or undeclared small wars, usually between colonial powers and indigenous populations. There was, however, a growing recognition that military operations in support of national policy outside of declared large wars required new terminology.

The advent of the Cold War (1946-1990) produced an impetus for additional definition. In global terms, "cold war" was a state of being in which nations constantly prepared for declared war during peacetime at levels of activity much higher than those prior to the Second World War. This state also included the conduct of military operations in preparation for declared war, for example, the extensive use of military forces for intelligence gathering activities or the airborne alert of nuclear-armed bombers. As the Cold War evolved, the stalemate between NATO and the Warsaw Pact prompted the Soviet Union to conduct overt and covert military preparations and operations in the emerging Third World. This coincided with the de-colonization efforts of some Western powers with resultant Western military operations short of declared war. All in all, there was no real peace; nevertheless, there was no open conflict between NATO and the Warsaw Pact.

The post-Cold War period, the one we are in today, has not brought us back to a state of peace, assuming that one ever existed. The collapse of the Warsaw Pact was similar to the British withdrawal from empire in the twentieth century. It has re-opened old wounds and created new ones. New and potential enemies have appeared, and military operations short of declared war will continue.

What does this mean in the Canadian context? Before the Cold War, the Canadian command and control organizations were peacetime administrative ones. Their job, once war was declared, was to mobilize an army, a navy, and an air force around an embryonic cadre force, deploy the forces, and fight the monolithic enemy—in this case, Nazi Germany, Fascist Italy, and Imperial Japan. Command and control structures created during the war were on the whole temporary ones, and Canadian forces were incorporated into coalition command systems. The Canadian system was in theory supposed to revert back to peacetime administration once the war was won, but the need to have an increased state of readiness and to participate in alliance operations globally during the Cold War produced a command structure that had to deal with joint operations.

As Canadian politicians fleetingly grasped the increasingly complex nature of the use of military force to support Canadian "peacetime" aims—diplomacy, peacekeeping, the evacuation of non-combatants during revolutions, fisheries patrols, and the like—the command system struggled to adapt so that joint planning and operations could be conducted on a day-to-day basis in the absence of declared war--a diplomatic declaration which itself is almost obsolete today in the world of covert operations, information warfare, and resource protection.

In effect, the spectrum of military options available to the civilian policymakers is so great today, that we should consider degrees of intensity of military operations, in terms of numbers of forces and the efforts to support them, as opposed to "peacetime"—a state of no declared war, military forces in embryo and "off"-and "wartime"—a state of declared war, mobilization and "on." Certainly the complexity of the technology involved in military operations these days militates against quick mass mobilization to respond to the political requirements on the use of force, which in today's media-based system is mainly speed. Consequently, joint military planning organizations must exist alongside military administration organizations at all times. JTF HQs must exist on a day-to-day basis so that they can respond to Canadian interests on a moment's notice.

A mobile guard for the Royal Yacht during Ex Gamescan 76, in support of the 1976 Summer Olympics. Domestic operations can involve large troop deployments and require detailed joint level planning. (Courtesy CFPU)

It is readily apparent that the end of the Cold War did not create the global utopia predicted by those who thought the bulk of the world's problems were generated by superpower rivalry. Recognition of this fact within Canadian policy circles outside DND since 1990 was slow, however, despite the 1990-91 Gulf War. Such ignorance was tolerated probably because there were perceived political benefits to be reaped from reducing the defence budget. Coupled to this, perhaps, was the lack of recognition that Canada's armed forces could, in fact, be systematically used a political tool outside of the NATO context.

Though it was clear that a new defence policy was required to guide the armed forces into the post-Cold War era, the process took some time, with the 1994 Defence White Paper emerging as the primary expression of the new policy. In 1991, however, policy guidance was issued under the authority of the Chief of the Defence staff "on the requirement for the CF to be prepared for global-wide contingency operations."[2] This guidance appears to be the first move in a shift away from NATO-centric defence planning which dominated Canadian planning for forty years.[3]

The NATO-centric force employment vision was focused almost exclusively on the European continent, with the bulk of military activity aimed at high intensity operations working as part of an alliance effort in a defined war situation. After 1991, however, "global contingency operations" meant that Canadian forces had to be prepared to operate in Africa, Asia, the Caribbean, the Middle East, or Latin America. The forces had to be able to conduct operations across a wide spectrum of conflict. The bulk of the operating areas do not posses Western infrastructure and were further away from North America than Europe, which meant that the forces had to be relatively self-supporting. Thus a premium was now placed on joint planning to get the forces into the theatre of operations, support them in areas that retained primitive infrastructure, and extract them under threat if necessary. Under the new guidance, it was even conceivable that Canada might have to conduct operations on its own.

The eagerly anticipated 1994 Defence White Paper did not, however, provide the specifics of Canada's new national security policy sought by the national security policy implementers at NDHQ. It was a vague document in many ways, and the planners were initially quite loath to exploit its ambiguity. The White Paper identified several problem areas—failed states, refugees, regional instability, sovereignty protection, weapons proliferation—but did not attempt to predict what environment NDHQ should plan for. Nevertheless, the White Paper encouraged NDHQ to retain

Sean M. Maloney, Ph.D.

"combat capable forces" capable of operating within the whole spectrum of military operations in support of whatever policy the government deemed necessary in the future. NDHQ planners were left to their own devices to determine how this should be done.[4]

The environment in which the J-Staff was formed and later evolved mirrored the American experience when their national security system was overhauled in the early 1980s. The problems identified at the time by General David C. Jones, the Chairman of the Joint Chiefs of Staff, were similar to those encountered by Canadian planners. Jones noted that there was a "disconcerting pattern" in American military history, in which he noted, "We could do things poorly at the start of past wars and still recover because time was on our side."[5] J ones identified a number of deficiencies, which also pertain to the Canadian case, particularly in the 1980s:

- strategy is so all-encompassing as to mean all things to all men.
- leaders are inevitably captives of the urgent, and long-range planning is too often neglected.
- authority and responsibility are badly diffused.
- rigorous examination of requirements and alternatives is not made.
- discipline is lacking in the budget process.
- tough decisions are avoided.
- accountability for decisions or performance is woefully inadequate.
- leadership, often inexperienced, is forced to spend too much time on refereeing an intramural squabble for resources.
- the combat effectiveness of the fighting force—the end product—does not receive enough attention.[6]

Why are these deficiencies significant? They had (and in some cases still have) to be overcome to prevent exposing Canada's soldiers, sailors, and airmen to needless risk in an increasingly lethal global environment. Effective Canadian planning and command organizations are critical if we are to reduce the possibility of failure. To do this we need to reduce the ad hoc reactive responses inherent in Canadian crisis management. Canada cannot afford another Dieppe or Hong Kong at one end of the spectrum, or another Rwanda or Somalia at the other, with all the attendant political and human backlash contained in the fallout from such situations.

most contingency operations conducted in the 1950s and 1960s were planned using the "back of the cigarette pack" approach

In short, Canada is not going to suddenly retreat from its international responsibilities or its independent global national interests. It cannot afford to. Attempts to avoid involvement based on the assertion that Canada's military forces are not equipped, prepared or commanded effectively will fall on deaf ears when the next crisis hits and an effective military response is demanded by Cabinet or the people of Canada. The Armed Forces must have an effective command and control system that is capable of conducting joint operations globally across the spectrum of conflict.

A PROBLEM IDENTIFIED: THE RENEWED NEED FOR JOINT PLANNING IN THE 1980S

Throughout the 1970s, the bulk of the NDHQ planning staff activity was devoted to the day-to-day operations and maintenance of deployed forces committed to the UN and NATO and, in the case of Operation GAMESCAN 76, domestic operations. Wartime planning, of secondary importance, focused on the employment of the Europe-based commitments in the Central Region, the reinforcement of those commitments, and deployment of Canada-based forces to other European commitments at sea and to Norway. Virtually no capability existed to plan for and execute contingency operations, joint or not. None of the existing commitments appeared at the time to demand a joint planning and command approach.

As we have seen,[7] most contingency operations conducted in the 1950s and 1960s were planned using the "back of the cigarette pack" approach. Commanders and planners during these years had wartime experience and were used to hasty improvisation without the burden of reams of paperwork and large staffs. In most cases, they all knew each other or at least had the Second World War as a common experience and reference point. The force structure was conducive to improvisation since a wide range of capabilities existed within it. The acceptance of a nuclear warfighting strategy in the 1950s and 1960s discouraged complex mobilization planning, and, in any case, mobilization resources were cut to the bone by 1958.

Contingency planning was, however, reaching the point where it could no longer be improvised on short notice, be efficient, and achieve success. The shift in NATO to a flexible response strategy in 1967 placed a new premium on conventional forces and thus mobilization planning. There were decreased operational resources available after the cuts in the early 1970s, which discouraged mobilization planning in Canada. The new guard in NDHQ had no wartime experience and were perhaps more career-minded. The administrative culture at NDHQ was at odds with an effective operational culture. A factor compounding this discord was the instability of the planning and command system over the course of the decade. Increased civilianization, whereby untrained but powerful people thought that

they needed to be involved in all aspects of CF activity to retain their personal power within the civil service, was another factor. At another level, the civilian political leadership felt an increased need to micromanage operations because of the perceived and real political repercussions brought on by near-instantaneous media coverage. All in all, the lack of trust between the elected civilian officials, the non-elected civilian bureaucrats, the uniformed bureaucrats, and the uniformed commanders and operators was reaching critical mass.

Two events highlighted the decrepit state of the planning organs in NDHQ. The first was the 1979 WINTEX NATO-wide command post exercise. This exercise series had been run throughout the 1970s on a biannual basis. In general terms, WINTEX was to exercise and evaluate government and national military command procedures in a crisis scenario leading up to mobilization and limited nuclear war. During the play of WINTEX 79, Canada was unable to meet its long-established NATO requirements. The breakdown occurred in the alert phases leading up to the start and beginning of the war.[8] Essentially, WINTEX 79 demonstrated that Canadian planners and operators were not capable of carrying out dyed in the wool, planned, NATO wartime operations—the CF's rasion d'etre—let alone conducting rapid reaction contingency operations for national purposes outside of the NATO area.

The first official examination of the problem was the Task Force on Review of Unification of the Canadian Forces. The Progressive Conservative government of Joe Clark, elected in 1979, had as its election platform a promise to re-examine Unification. A Task Force on Review of Unification of the Canadian Armed Forces was then established, which reported in March 1980. The Task Force reported directly to the Minister of National Defence, Allan B. MacKinnon. However, the Liberal upset election in March 1980 interfered with the Task Force's process and the ultimate disposition of the final report. The Chief of the Defence Staff, Admiral Robert Falls, was sensitized by the change in government and subsequently recommended that the work of the Task Force be examined by a Review Group on the Report of the Task Force on Unification in the Canadian Forces. This was done in part because it was believed the report " would not reflect favourably on the Liberal government."[9]

The bulk of the report dealt with items like training, recruiting, and the personnel system. The most important discussion was, however, on command and control issues, and there were some damning conclusions. There was the belief that "there had been insufficient sea, land, and air environmental expertise available to the senior decision makers." The Commanders "acted as advisors only when asked for advice, and that consultation usually occurred after a major decision was made." Worse yet, "the chain of command was perceived as being blurred": "communications to [NDHQ] bypassed command headquarters and, in other cases, the command acted only as a clearing house for information." In addition, NDHQ was "not being responsive to operational requirements" in that there "had been insufficient attention to tactical doctrine formulation" at NDHQ. One suggested solution was "a Joint Chiefs of Staff organization."[10]

The situation was aggravated by the merging of CFHQ and NDHQ. At the Assistant Deputy Minister level, "civilians were making or contributing to the making of decisions of a military nature and that control by the civil power should not mean control by the Public Service...this perceived civilianization had resulted in a loss of focus at the 'sharp end'....civilian rank and job tenure acted to the detriment of the influence of serving military personnel."[11]

The CDS's Review Group examined all recommendations and evidence generated by the Task Force. It then elaborated on the themes and came to its own series of recommendations, which were more detailed those of the Task Force. In the area of command and control, the Review Group concluded that there needed to be "strong emphasis on operational matters and on the need to recognize environmental differences" and agreed with the Task Force's conclusions that there were "too many sources of direction" and "lack of environmental direction" at NDHQ.[12] As to the charge of over civilianization, the Review Group agreed and elaborated, "civilian standards and values are displacing...proven military counterparts and in the process are eroding the basic fibre of Canadian military society...the Forces are facing a crisis of the military ethos."[13] This over civilianization contributed to the trend away from operational matters and towards day-to-day administrative (and project implementation) ones at NDHQ.

The Chief of the Defence Staff of the day (1980-83), General

The results of poor joint planning. We cannot allow this to happen again. (Courtesy National Archives of Canada)

Sean M. Maloney, Ph.D.

Ramsay M. Withers, directed that a re-examination of the national command and control system take place in 1981. The draft policy directive generated by his staff identified a necessary corrective to the existing state of affairs:

> *As increasingly sophisticated information exchange and management systems become available, there will be a discernible tendency to centralize control of the CF. At the same time, the very nature and seriousness of the military threat to Canadian national security demands a flexible, robust and reliable exercise of command and control. Command and control is a dynamic and occasionally indistinct process linking any commander to the resources he controls and to the authority to which he is responsible. It facilitates planning, implementation, coordination, monitoring, and modification of any operation or activity, and to be effective, must provide for a secure and reliable two-way flow of direction, advice, and information.*[14]

In effect, the draft policy directive was suggesting Canada's command and control system by the early 1980s was decentralized, inflexible, not robust, unreliable, and un-dynamic.

While the NDHQ system was processing the CDS's policy directive, NDHQ conducted Exercise RENDEZVOUS 81 (RV 81). This exercise was designed to conduct collective training at the division-level for Mobile Command units across Canada. It had been delayed two years in a row, partly because NDHQ had lost the ability to conduct a strategic movement of resources within Canada, let alone deploy them outside of North America. An ad hoc movements cell had to be created at the last minute so that Mobile Command units could strategically deploy from all over Canada to CFB Gagetown, the exercise area.[15]

It took another year, almost 21/2 years after the initial directive had been implemented, to finalize a CF command and control policy. The exact reasons why the process was drawn out are obscure, but it appears as though there were snags discovered by the judge advocate general staff over the exact legal authority of the Chief of the Defence Staff to command. At one point it even appeared that the Chief of the Defence Staff might only have the authority to advise in the command of the CF as opposed to actually doing so. In addition, all of the operational commanders and civilian bureaucrats were consulted and asked for their views, which took time.[16] The possibility that personal friction between various uniformed and civilian members interfered with the process should not be discounted.

The final version of the CF command and control policy was promulgated in April 1983. It called for the capability to "deploy and redeploy forces in Canada or abroad and sustain these forces under peacetime, crisis, or war conditions." It also noted, "a commander must be able to assign missions and tasks to subordinates and adjust these as circumstances dictate."[17] The role of the Chief of the Defence Staff and his relationship to the Minister of National Defence (MND) was extensively clarified. For example, the Chief of the Defence Staff was to be the senior military adviser to the MND and responsible to him for "the effective conduct of military operations and for the readiness of the CF to meet the commitments assigned to him by the Governor-in-Council." The policy further stipulated that "the CDS...exercises command over the Canadian Forces" and he was permitted to delegate this command.[18]

The Department of National Defence and the CF were "two separate and distinct but interdependent organizations" even though they were intermingled in one building. The Vice Chief of the Defence Staff (VCDS) was the Chief of Staff of the CF, while the Deputy Chief of the Defence Staff (DCDS) was responsible for the CF's operations. The primary organ for this was Directorate of Military Planning and Operations, under the DCDS, which was to "meet programmed and emergency activities." The NDHQ Operational Staff was to consist of the DCDS Battle Staff, the National Defence Operations Centre (NDOC) Staff and augmentation teams, the DCDS Operational Planning Staff, and the National Defence Intelligence Centre. Supporting staff would be provided by the Personnel Coordination Centre and the Logistics Coordination Centre.[19]

Exercise RENDEZVOUS 81...had been delayed two years in a row, partly because NDHQ had lost the ability to conduct strategic movement of resources within Canada

General Withers was replaced by General Theriault in 1983, and the Trudeau government was defeated by the Progressive Conservatives under Brian Mulroney. The new government's defence minister, Bob Coates, was out to eliminate the last vestiges of unification. Though Coates was replaced by Erik Neilson after the embarrassing incident in Lahr, there was serious movement in the government to overhaul defence policy at all levels.[20]

The most visible manifestation of this process was the 1987 White Paper, *Challenge and Commitment*. Less visible were the efforts to rationalize the planning system in NDHQ. Part of this process was the commissioning of another study to re-examine unification. Part of the final report, "The Impact of Integration, Unification, and Restructuring on the Functions and Structure of National Defence Headquarters," known as the Loomis

Study, was released in 1985.

The Loomis Study was commissioned by General Theriault. Theriault believed that defence planning was "stalled by the expectation that the civilian public service had isolated the CDS." In his view, the public service "invaded the command structure," and it was driven "primarily by budgetary and process means," which were not conducive to operational planning since the "public service culture is fundamentally at odds with the command culture." Theriault even asserted that the CDS "was essentially neutered by the administrative culture of NDHQ since 1972."[21] There were other aspects to this problem, however. Some officers in NDHQ used their military position to build contacts and then springboard into the public service in DND. The inability of the officer corps to build an ethos to strengthen their own position and to develop ways of beating the bureaucracy rather than joining it contributed to the problem.

Exercise BRAVE LION was yet more evidence that the operational joint planning capability to mount a major operation was seriously deficient

The Loomis Study noted that the operations planning component within the DCDS was deficient. There were problems between Assistant Deputy Minister (Policy) (ADM(Pol)) and the DCDS group over the continuity of policy. The DCDS group did not have enough personnel to handle ongoing missions and potential contingency operations. There was a split within the organization between planners trying to conduct forward planning as a whole and other planners attempting to handle specific environmental planning to meet existing commitments. Additionally, there was a conflict of interest between the chiefs of the elements within the DCDS group in that they were complicit in carrying out service advocacy. Finally, the DCDS did not have a strong Chief of Staff to mediate these disputes as they arose, which, in addition to the manning problem, distracted the staff from their primary tasks.[22] The Loomis Study concluded by stating, "Unification was not an optimal solution ....the solution to a proper grasp of combined operations lies not in Unification but in strengthening the concept of a joint staff derived from service experts but owing some higher allegiance to a common cause."[23]

EXERCISE BRAVE LION: CAST TO NORWAY, 1986

The case of Exercise BRAVE LION was yet more evidence that the operational joint planning capability to mount a major operation in NDHQ was seriously deficient.

Some background about the Canadian Air Sea Transportable (CAST) commitment is necessary before diving into the intricacies of BRAVE LION. After the 1968 election, the Trudeau government sought to end the existing Canadian land force commitment to NATO in Europe. The existing commitment was one division, with one brigade group deployed to West Germany in peacetime. In the 1968 defence review, the feasibility of replacing the two brigades with one brigade group was tabled. After some consultation, the decision was made to commit this "Air/Sea Transportable" (AST) brigade to north Norway in the event of a crisis.[24] This decision was made without adequate military input, probably due to the confusion reigning within the CFHQ organizational structure of the day. For example, there was no realistic discussion how a Canadian Forces logistic structure geared to fight a 30-day nuclear war with little or no mobilization could transport and support the AST brigade group in Norway and support 4 Canadian Mechanized Brigade Group (CMBG) in central Germany simultaneously.[25] At the same time, the Canadian government also committed two CF-5 squadrons for operations in Norway. Despite all of the rhetoric of unification, no attempt appears to have been made at the time to connect the deployment or operations of the renamed CAST Combat Group and the Rapid Reaction Squadrons. Indeed, the relationship between these commitments and the existing AMF(L) commitment were ambiguous at best.

The responsibility for the CAST role at the brigade group level changed hands at least three times between 1968 and 1986. It appears as though the CAST group exercised only once in the 1970s—and then only in Canada.[26] CAST became a paper commitment, and the complexity of transporting a brigade group by sea through hostile waters to Norway and then deploying and supporting it in an active theatre was forgotten, probably deliberately, over time.

By the 1980s, the credibility of the CAST commitment came into question particularly during Ex BOLD STEP but more importantly after the return of the Progressive Conservative government in 1984. Consequently, the decision was made in either 1983 or 1984 to conduct an exercise to test the CAST concept. BRAVE LION "was a combined/joint exercise to practise and validate all plans and agreements for the deployment and employment of Canadian reinforcement forces [to Norway]."[27] The CAST brigade group and one Air Command Rapid Reaction Squadron (RRS) consisting of ten CF-5s would participate.

It took two years to plan BRAVE LION, a long time considering the fact that the commitment had been in existence since 1968 and it was part of SACEUR's crisis management contingency plan, which was to be executed before war started. When finally executed in August-October 1986, the results were predictable. Once on the ground, the CAST brigade (by this time based on 5e groupement brigade du Canada or 5e GBC) functioned well under exercise conditions, as did the air movement component, which had

Sean M. Maloney, Ph.D.

been considerably strengthened since RV 81.[28] Where the exercise fell apart was in the staffing, deployment, and, most importantly, in the command and control relationships.

BRAVE LION was commanded by the CDS and delegated to the DCDS. Director General Military Plans and Operations was the planning office for the exercise, with support provided by the rest of the DCDS group. They immediately discovered that the existing contingency plan, OPLAN BOREAL, was sketchy and the plans to support CAST (reinforcements, casualty evacuation, and logistics) were non-existent. There was no written relationship between the RRS and CAST. On reflection, the planners noted that "NDHQ planners...were addressing a large scale joint/combined exercise for the first time..."[29]

Since there was no logistics capability, an ad hoc Canadian Support Group (North) (CSG(N)) was formed for the exercise. It had to be cobbled together from existing logistics units that were committed to other wartime tasks. As for planning:

> During any major exercise or operation, especially in peacetime, C2 and coordination of NDHQ operational activities are [sic] effected by a form of matrix management and by regrouping of elements of the headquarters into various ad hoc organizations and systems....such an approach is possibly neither as effective nor as efficient as it might be.[30]

There did "not appear to be a definitive concept document which is available and understood by all concerned." NDHQ Policy Directive P1/83, a report noted, was inadequate since it only generally "described policy and terms of reference for the Principle NDHQ staff."[31] Once again, the DCDS staff was undermanned and had problems coping with an exercise, let alone a real crisis situation. The decision to cut Headquarters Canadian Forces Europe (CFE) out of the exercise was "a significant weakness" since CFE was the command responsible for the reinforcement forces coming into the theatre. In sum, the operational planning system was in trouble.

5e Groupe Brigade du Canadian deployed to Norway in 1986 to exercise the CAST brigade commitment. Then, as now, strategic movement of ground forces has been difficult. (Courtesy CFPU)

A second problem was the confusion over the role of Canadian and NATO naval forces both in the plan and in the exercise. Planners thought that Maritime Command (MARCOM) participation in the exercise was an "unaffordable luxury" and chose not to exercise convoy escort.[32] This is just as well since it would have exacerbated the workload of the already floundering DCDS planning staff. Operationally, MARCOM planners already had their anti-submarine ships and aircraft committed to SACLANT for operations at the very start of the conflict. Finding enough Canadian escort ships to cover the CAST deployment prior to the war starting was not built into national or NATO naval plans—another serious flaw.[33]

Another problem was the command and control arrangements for the air units involved in BRAVE LION. Planners determined that they would test what they referred to as a "Senior Airman in theatre concept," which, if there had been a proper JTF for the exercise, would have been part of it with a headquarters increment. Air units in BRAVE LION consisted of the RRS, three Chinook medium lift helicopters, fourteen Iroquois, and ten Kiowa light observation helicopters. Significant problems encountered in fitting the Senior Airman position into the deployed command structure included "the jealous guarding of traditional land and air element areas of independence and responsibility." In theory, the CDS delegated authority for air operations to the Canadian National Commander, though Commander 5e GBC was not really designated as such for BRAVE LION. Existing doctrine at the time incorporated the helicopter units into the brigade headquarters. Despite this, the Aviation Wing under the Senior Airman was formed and the ad hoc headquarters was co-located with the helicopters. He had nothing to do with the RRS and was not allowed to evolve into a theatre "air commander" at the CSG(N) or the deputy commander of the CAST brigade.[34]

Though the post-exercise analysts collected significant data on planning and command problems encountered during BRAVE LION, they thought it would be "unwise to attempt to report on problems related to the overall organization and command and control at NDHQ and its relationship to commands." "Weaknesses in methods by which the way NDHQ addresses crisis management are most important and can be dealt with discretely." The analysts noted that "the ability of the current matrix management system (vice a joint staff) and the ability of the DGMPO organization to cope with a real crisis was brought into question during the exercise."[35] The reasons for this skittishness on the part of the analysts are obscure but most probably related to the CDS's push to move away from the Central Region and focus on north Norway. General Theriault was adamant that Canadian defence policy was too "random" and that several commitments could be

consolidated with an appropriate savings and rationality.[36]

In the wake of BRAVE LION, the new CDS, General Paul Manson, and the Deputy Minister, D.B. Dewar, took another shot at reviewing NDHQ's ability to command and control deployed forces. The resultant NDHQ Policy Directive P2/86, "The Operation and Organization of National Defence Headquarters," was done concurrently with the ongoing White Paper process. Both men agreed that the existing "integration of military and civilian staff works well," but they thought that the CDS and Deputy Minister (DM) needed better access to Cabinet in wartime. The Policy Directive noted that there were problems in policy coordination between the ADM(Pol) group and the DCDS group and between these two entities and other government departments, including the Privy Council Office (PCO). P2/86 proposed two changes: the creation of a policy coordination group in ADM(Pol) and the creation of a reporting system in the DCDS group to improve operational readiness.[37]

P2/86 was eventually "abrogated and consequently shredded."[38] The reasons are obscure. They appear to be related to the realization after BRAVE LION that the system needed a more thorough reorganization since the directive was issued prior to the exercise and rescinded after the Hunter/Little study was produced in 1989.

OPERATION BANDIT: JTF TO HAITI, 1987-1988

The icing on the cake was Operation BANDIT. BRAVE LION was an exercise in a known and planned for operating area, while BANDIT dealt with a serious, unforeseen emergency in a region generally believed to be peripheral to Canadian interests. The collapse of the "Baby Doc" Duvalier regime in Haiti and the subsequent 1987 elections produced massive mob violence that threatened Canadian interests. Over 1000 Canadians, including many aid workers and missionaries who were mostly from Quebec, were caught in the middle. The Canadian government was under pressure from the Haitian community in Montreal to respond. External Affairs contemplated the worst-case scenario and predicted that violence would be increasingly directed against foreigners.[39]

On 1 December 1987, NDHQ quietly started a contingency planning process, Operation SPEAR, to extract Canadian using CF airlift resources. This anticipatory planning was based on media reports regarding what was going on in Haiti. Canadian Ambassador Claude Laverdure, however, was recalled on 11 December. After being briefed on the situation, the Prime Minister directed that External Affairs and DND formulate a discrete contingency plan to evacuate Canadians from Haiti. The staff check was changed into a formal contingency plan and called Operation BANDIT.[40]

DND then sent the Director Military Operations Coordination (DMOC) to Haiti on a one-man reconnaissance that lasted six days. Concurrently with this, intelligence estimates indicated that the situation would remain stable until perhaps 6 January 1988 since, they reasoned, the opposition would need time to formulate a response. That response would probably be a violent one given the nature of the massacre. French and American analysis concurred with this assessment, and they were also creating their own contingency plans.[41]

There was more driving Operation BANDIT than just an in-and-out, non-combat evacuation operation, however. External Affairs analysis concluded that there were two possible scenarios affecting Canadian interests:

- a general deterioration of internal security such as might threaten the safety of Canadians in the country; and
- the conduct of elections on the 17th of January under conditions which could cause a forceful rejection of the results by the Haitian community and the media in Canada and demands for Canadian Government action.

The worst case scenario, as envisioned by External Affairs, was that there would be prolonged civil strife presumably between military and Macoute forces. It could lead to: the collapse of already tenuous political and military control; descent into anarchy; settling of old scores; xenophobic outbursts against foreigners and the church....This and other less grisly scenarios would be exacerbated by the increase in consumer shortages.[43]

Intelligence analysis concluded that there would be two distinct windows of potential violence: the week of the announced 17 January elections (accompanied by a probable general strike and labour violence) and between 17 January and 7 February, the period between the election and the inauguration.

The Mulroney government was concerned about the Montreal media and the Haitian community in Montreal. There was a "concerted campaign, calling for the Canadian government to break relations," which was "organized mainly by the Haitian community, the missionary societies, with help of the media (principally *Le Devoir* because of its links with the Church, and the labour unions, because of their support for leftist causes."[44] The government planned to inoculate the media, which was anticipated to call for Canadian condemnation of the Haitian government, by emphasizing the themes of not placing Haiti's poor in jeopardy, concern for the safety of Canadians, and accepting the "realities of Haitian history."[45]

This policy stance should not be interpreted as outright support for the Haitian government or its aims by the Canadian government, though the Americans did support the Haitian government and Canadian aid flowed while it was in power. There were domestic political realities relating to Canada's ongoing constitutional crisis. The Meech Lake Accord had passed the previous June and the clock was ticking. Quebec separatists were now coming

Sean M. Maloney, Ph.D.

out against the accord, and Mulroney faced increased unpopularity and the loss of votes in the province.[46] The large expatriate Haitian community in Montreal would probably demand sanctions or even Canadian action in Haiti. It is clear that there was concern that an explosion in Haiti would be value-added grief for the government at this point.

The initial plan envisioned an airlift extraction. Ambassador Laverdure identified four airfields, two of which would probably be secured by hostile forces, and two others which would not be able to handle C-130 aircraft. This meant that a purely air operation was not feasible, though a C-130 was placed on two-hours notice to move at CFB Edmonton. Helicopters and ships were needed, and ground forces would also be needed to secure the pick up zones. There were three options which External Affairs and DND agreed would constitute the contingency plan:

- ongoing legal peacetime activity such as voluntary evacuation;
- military activity with the consent of the government of Haiti; and
- military action without the consent of the government of Haiti.

Detailed contingency planning commenced on 20 December 1987. Fourteen hundred Canadians were identified as residing in Haiti, but External Affairs thought that only 600-800 would want to leave (this was based on the Embassy's establishment of a warder system and registration list in preparation for evacuation).[48]

Overland evacuation of Canadians to the Dominican Republic was considered far too hazardous to seriously contemplate given the nature of the terrain and potential opposition.[49] Eventually, options for the use of Canadian military forces explored by a special joint External Affairs-DND team came down to the deployment of two DDHs with helicopters to the "Caribbean for training and port visits with voluntary evacuation of Canadians on these ships" and the use of CC-115 Buffalo aircraft using outlying airfields to pick up Canadians in the countryside (this was the original option for evacuation in a permissive environment, that is, one in which the Haitian military did not interfere). The other option was the use of a naval force and helicopters with infantry in support to rescue Canadians from outlying villages and then evacuate them by C-130 Hercules from airheads assumed to be secured by the French and the Americans.[50]

Divisional Commander's pennant from Exercise RV 87, held in April and May 1987. This series of exercises provided considerable experience in strategic movement and command and control. (Courtesy Commanding Officer LFDTSHQ)

On 30 December 1987, the first warning order was issued. A joint task force (JTF) was to be formed under the command of Commodore L.C.A. Westropp. MARCOM was to be prepared to sail one AOR and two DDHs to Puerto Rico. Four Sea Kings and three FMC Twin Huey helicopters, along with an expanded medical team and an infantry battalion headquarters, would be embarked. FMC was to prepare an infantry battalion group. The deception plan for Operation BANDIT was to relate naval preparations and movements to a joint Canadian-American exercise called FLEETEX 1/88.[51]

There was an initial concept of operations. The naval task group, TG 300.1, would proceed to Puerto Rico or Guantanamo Bay. It would stand by at the location and proceed to the operating area on order from either the Minister of National Defence, the Secretary of State for External Affairs, or the Prime Minister. The two DDHs would have three Sea Kings, while the AOR would have two Sea Kings and the Twin Hueys. Six C-130 Hercules and four Buffalos would move 3 R22eR to the staging base and then embark one company on the ships. One company would remain with the transport aircraft and fly in with them if they were ordered in. The other would remain in reserve at either Puerto Rico or Guantanamo Bay. The sea-going company would secure beach and helicopter landing zones.[52]

The ships selected for Operation BANDIT initially were the AOR HMCS PRESERVER, the 280-class DDH HMCS ATHABASKAN, and the DDH HMCS NIPIGON. At the last minute, however, NIPIGON was replaced with the St Laurent-class DDH HMCS SKEENA. TG 300.1 sailed from Halifax on 5 January 1988.[53] 3 R22eR, a platoon from 5 Field Ambulance, a troop from 119 Air Defence Battery, and two flights of Twin Hueys from 403 Tactical Helicopter Squadron stood by. A small planning cell from 3 R22eR embarked prior to departure from Halifax.

A serious problem had developed, however. Despite the deception plan, the media in Halifax noticed that the deployment was occurring during the holidays and that the announced FLEETEX 1/88 used the Caribbean as an operating area.[54] This had undue political effects. The leaks and media speculation "increased tension in Haiti" and External Affairs "requested no further actions be taken which would indicate military preparedness for operations in Haiti."[55] The news reports "angered Namphy and have not improved the situation for Canadians in Haiti."[56]

Task Group 300.1 was now at the Puerto Rico Operating Area, while

Mobile Command and Air Command movements continued covertly. Ambassador Laverdure then announced that "Canadian vessels that are transiting to the Caribbean area are there for military training and their presence is not related to the current situation in Haiti," which was done specifically to "defuse the speculation that has arisen in the press."[57]

As the election approached, Canadian planning evolved. Operation BANDIT remained but one option. The press leaks increased External Affairs skittishness about an armed intervention. Fortunately, NDHQ was able to point out that the Operation BANDIT forces had a minimal "offensive capability...which therefore offer[ed a] minimum threat to [the] Haitian government and could not present the impression that Canada was invading Haiti or interfering with the election."[58]

Though the situation Haiti was noted as calm by External Affairs, the CDS, General De Chastelain, ordered that TG 300.1 be moved to a position 50 nm south of Haiti. This was done on 16 January 1988, the day before the election. Commodore Westropp was to exercise "maximum discretion, minimum electronic emission, avoid shipping [and] remain covert."[59] The elections were relatively quiet, with an estimated 5% turn out, and the Haitian forces were not alerted to repel the Canadian hordes.[60] Operation BANDIT was then terminated.

In the post-operation analysis, serious problems with the joint planning process and command relationships were identified. The operation was planned in the DCDS group, but the initial estimates were far too compartmentalized (mostly for security reasons), which left critical staff planners like the air movements people out of the loop. Because of this, the DCDS was unable to direct air movements to allocate resources for the operation (in fact, air movements provided their estimate up to the DCDS group, which amounted to them directing the DCDS). Linked to this was the fact that there was no coordination meeting for the first 27 days after the warning order was given by the CDS. Once the planning system got into gear, daily coordination meetings were held by an ad hoc Joint Planning Team.[61]

Apparently, a formal DCDS Joint Planning Staff (JPS) existed on paper. This DCDS JPS was an outgrowth of the changes proposed by General Withers back in 1983 and had been incorporated into NDHQ SOP manuals dealing with the shift of NDHQ from a peacetime to a wartime posture.[62] Operation BANDIT, however, was neither war nor peace, and Canadian doctrine did not formally accept what we now refer to as operations other than war (American doctrine) or conflict (Canadian doctrine). Activation of the NDHQ war plan would have been excessive since it was geared towards World War III, yet not activating it diminished the ability of the headquarters to plan.

Significant communications problems were encountered during Operation BANDIT. Since there was "no joint operations doctrine and a common pool of equipment to project CF command and control to the Caribbean, joint communications planning started from nothing." NDHQ had to borrow satellite communications equipment from the Department of Fisheries and Oceans, while a secure communications system was borrowed from the RCMP. As one signaler noted, "we borrowed from ourselves in putting a satellite terminal on the roof of NDHQ off of a West Coast ship in re-fit." In addition, the communications systems between the land contingent and the naval contingent were incompatible.[63]

A very blunt post-operational analysis conducted by Vice Admiral Chuck Thomas made some scathing and accurate comments about the CF's ability to mount contingency operations:

> Operation BANDIT exposed a weakness in command and control of operational forces. My analysis is that NDHQ does not have the capability to plan a multi-dimensional operation. The formulation of such operational planning should be tasked to a lead command, which would liaise with NDHQ and other commands. Once the plan was formulated, execution of the mission could be assumed by NDOC or left with the operational commander.[64]

Furthermore:

> the issues of command and control, communications, media liaison, and logistics response must be addressed by NDHQ....Operation BANDIT proved conclusively that the Canadian Forces does not posses such a system and future attempts to conduct similar operations will be severely hampered until this deficiency is resolved. Also, a system which activates the logistics network in response to short notice operational requirements must be developed.[65]

On the positive side, the DCDS after action report noted that the JTF organization for the in-theatre command of Operation BANDIT worked well. It was the connection of the JTF to NDHQ and NDHQ's ability to plan and mount the joint operation that was a problem. For example, the NDOC and Canadian Forces Communications Command jumped down several levels in the chain of command to the deployed units, which caused confusion as to who was in command. Mobile Command and Air Transport Group resorted to "bilateral" negotiations to move equipment and personnel from Valcartier to Halifax.[66]

OPERATION VAGABOND: UNIIMOG TO THE PERSIAN GULF, 1988

In September 1980, Iran and Iraq initiated a bloody eight-year war in the basin of the vital oil-bearing Persian Gulf. Eventually, this war degenerated into a horrific First

Sean M. Maloney, Ph.D.

World War-like stalemate, which was characterized by Iranian massed human wave attacks and Iraqi chemical weapons use. The conflict spread to encompass the Gulf itself during the so-called "tanker war" in which vessels were wantonly attacked by each side in order to disrupt the flow of oil and thus the economy of the adversary. Eventually, the eight-year UN effort to mediate and bring about a ceasefire paid off: in February 1988, Iran accepted a UN resolution calling for a ceasefire. On 2 August 1988, UN Secretary General sent in a recce party. Within six days, the UN had generated an implementation plan (Resolution 598), subsequently accepted by the belligerents, which involved the creation of the United Nations Iran-Iraq Military Observer Group (UNIIMOG). UNIIMOG was to monitor the ceasefire and subsequent withdrawal and verify and report on belligerent activity in the ceasefire zone.[67]

Canada immediately announced that it would contribute to UNIIMOG on 8 August. By 10 August, a Canadian recce party of five men left for the operational area. The UN plan called for the deployment of 350 observers with an additional 174 administrative support personnel and an undefined signal capability. Canada elected to provide the UNIIMOG signal unit.[68]

To handle the higher-level planning for this deployment, a temporary Battle Staff, which included the VCDS and several Major-General-level positions, was formed. The Battle Staff was superimposed on the existing NDHQ system and quickly bogged down in its deliberations. There were several personality conflicts extant, but to cap it all off, an argument broke out over how many USAF C5A Galaxy transport aircraft could fit on the ramp at CFB Trenton. At one point, a senior member of the Battle Staff was down on the floor sketching out the Trenton ramp and preparing to place paper cut-outs of C5As on it to prove his point.[69] In the end, the force deployed using Soviet Aeroflot aircraft since Iran would not permit American aircraft into Tehran. Naturally, if Canada had owned its own strategic airlift fleet of C-141s as the 1960s Mobile Command structure demanded, this would not have been an issue.

The formation selected by Mobile Command to send the Canadian contingent was the Special Service Force (SSF), which was normally tasked with defence of Canada operations under the CANUS commitments. Operation VAGABOND was the second major deployment of SSF units in 1988: the Royal Canadian Dragoons had deployed earlier that year to Cyprus on a normally scheduled peacekeeping rotation.

The first warning order sent to SSF Headquarters asked the commander to consider sending a 100-pers signal unit, possibly drawn from the 200-pers SSF Headquarters and Signal Squadron. There was no statement of aim, no discussion of scope, and no terrain analysis sent to SSF HQ so that this operation could be planned. When the CF cartographic establishment in Ottawa was queried about providing the appropriate maps, SSF Headquarters was told that there were none. The SSF commander, Brigadier-General Ian Douglas, and his staff used a National Geographic map that he received in the mail to conduct their initial planning.[70]

A filter was desperately needed so that...briefings to senior leaders could be made without the senior leaders dropping down too far "into the weeds."

The chain of command between NDHQ and SSF remained convoluted for the duration of the mounting of Operation VAGABOND. The DCDS planners knew little, while the Mobile Command planners knew next to nothing. There was a complete lack of intelligence flowing down to SSF Headquarters. The intelligence staff scrambled to get open source information at the local level. Eventually, the 100-pers commitment grew to 500 pers. The exact process by which this happened and at what level is obscure. This forced the continual alteration of plans. The lack of clear direction forced the SSF planners to query both Mobile Command and various NDHQ departments like Assistant Deputy Minister (Personnel), or ADM(PER), and Assistant Deputy Minister (Material), or ADM (MAT). At one point, the SSF planners were told by the NDHQ staffs not to talk to Mobile Command, and then Mobile Command told SSF Headquarters not to talk to NDHQ![71]

Eventually, the SSF put together an organization based on the 200-pers SSF Headquarters and Signal Squadron. But where were the other 300 pers going to come from? ADM(Per) essentially drafted Maritime Command and Air Command signals personnel from as far away as Esquimalt and ordered them to proceed to Petawawa. On arrival, many of the augmentees had no equipment, no field training, not even combat uniforms. They had not been briefed on what they were being moved for or where they were ultimately going. In the end, the contingent commander had to build the entire unit from the ground up.[72]

This deprived the SSF of its command and control elements. The entire 200-pers signal squadron was incorporated into 88 Canadian Signal Unit. Consequently, SSF was unable to meet the CANUS commitment if the international situation had worsened. It was even incapable of repeating Exercise RAPID STRIKE, held earlier that year, in which the SSF deployed to multiple locations across Canada to counter "enemy" forces attacking Canadian radar and command and control sites supporting NORAD, which in turn supported the protection of the nuclear deterrent.[73]

Operation VAGABOND after action studies were revealing: "Once again, the cancer of double-hatting

seriously aggravated the provision of support to the operation...."[74] Notably, the Canadian doctrine for mounting such an operation was obsolete. There were too many phases and too much staff involved for such a compressed time line. There had to be formal work-arounds of the "peacetime" procedures, particularly in Ottawa. During Operation VAGABOND, the informal bypasses generated by the time compression created too much confusion.[75]

A crisis management operational concept and joint doctrine to implement it is important given the complexity of operations. (Courtesy Combat Camera)

Colonel L.W.F. Cuppens, the Assistant DGMPO, conducted his own analysis and concluded that "there was a need for a mechanism whereby NDHQ resources could be mobilized to plan and execute a contingent operation which would be limited in scope and duration, vis-a-vis full mobilization envisioned [in existing plans] and secondly the need to have a sound understanding of the fundamentals of good joint staff procedures."[76]

The larger NDHQ operating plan was modified to include a section for "Augmentation for Operation in Situations Short of War."[77] In this modification, the National Defence Operations Centre was augmented with an Operations Director (full colonel), an SSO Operations (lieuteant-colonel), three component advisors from Navy, Land, and Air (majors), and liaison officers to finance, transport, External Affairs, engineering, personnel, Public Affairs, Mobile Command, Air Command, and Maritime Command. This organization would be set up for the duration of the operation and then disbanded.[78] On paper, at least, the grandfather of the J-Staff as we know it today was conceived.

Major-General John Arch McInnis determined that the gyrations over Operation VAGABOND were too dangerous to be repeated and accepted Cuppens' plan. A filter was desperately needed so that organizational and coordination briefings to senior leaders could be made without the senior leaders dropping down too far "into the weeds." A special staff responsive to the DCDS—which could not only keep the military leadership informed but could make executive military decisions and implement them without interference from ADM(Mat) ADM(Per) and ADM(Pol)—was needed.[79] Then the Mulroney government decided to send Canadian Forces to Africa.

OPERATION MATADOR: UNTAG TO NAMIBIA, 1989

The origins of the United Nations Transition Assistance Group (UNTAG) in Namibia went back to 1974. The conflict in Namibia and Angola amounted to a Cold War proxy fight, with the Soviets and Cubans supporting the Marxist government in Angola (the MPLA) against the South Africa and US-supported rebels, UNITA. The Portuguese had removed themselves from power in Angola in 1974 after a bitter war. The MPLA also supported an anti-South African guerrilla force in Namibia called SWAPO. The South Africans had administered Namibia for the UN until 1966, when the UN ruled that the occupation was now illegal. In 1978, a five-nation contact group, which included Canada, sought to mediate an end to the fighting.[80]

In 1979, the then-Minister of National Defence Barney Danson authorized planning to begin for a Canadian contribution to the planned seven-battalion UN peacekeeping force. The fighting continued, but the UN remained prepared to insert a peacekeeping force into the 1980s. When it appeared that peace might break out in 1982-83, DND told Cabinet that Canada was prepared to provide four Chinook helicopters and 130 personnel. If more forces were necessary "for political visibility reasons," six UH-1 Huey helicopters and 120 more personnel could also be deployed. Nothing more was done until 1988 as the fighting did not cease.[81]

In 1988, it looked as if there might be a breakthrough in another round of peace talks. In mid-September 1989, the UN asked Canada about the feasibility of providing five Chinooks, a 300-pers maintenance company, a 150-pers supply company, 250 construction engineers, and 150 signalers. Over time, Canada-UN negotiations produced a formal UN request in October 1988 for two Field Maintenance Area groups (300 personnel), engineers, and a 35-pers headquarters staff. The political problem at this time was that South Africa did not want Canada in UNTAG. On 13 December 1988, the Brazzaville Protocol was signed between Angola, Cuba, and South Africa. On 22 December, further agreements were signed in New York. Cabinet then approved a force of up to 600 Canadian personnel to serve with UNTAG for one year.[82] It was clear to Canadian planners that the Government of Canada wanted an "in and out quick" operation, something akin to today's "first in, first out" philosophy.[83]

By 10 February, the UN finally stabilized it requirements and asked Canada to provide 215 logisticians to establish a logistics base for UNTAG. The Minister of National Defence, Perrin Beatty, approved this change, and operational planning began. Like VAGABOND, Operation MATADOR cobbled together a composite unit called 89 Canadian Logistics Unit (89 CLU). 2 Service Battalion from the Special Service Force provided the bulk of the personnel, with Militia and other

Sean M. Maloney, Ph.D.

augmentation.[84] This time, SSF was ready and applied all the lessons learned from Operation VAGABOND.

In Ottawa, however, the special staff set up to handle the Canadian UNTAG commitment ran into problems similar to those encountered with Operation VAGABOND. The main problem, though, was the UN in New York. Canadian planners were seriously hampered by the lack of a UN concept of operations "despite the fact that UNTAG had been "planned" for ten years." Canada had to put together a logistic unit for a force of undetermined size operating without an operational plan.[85] The situation was aggravated by the fact that the UN requested and received two Canadian C-130s for in-theatre support missions. This necessitated deployment of a small air control element. There appears to have been no joint Canadian contingent headquarters for Operation MATADOR. No one thought the different Canadian organizations might have to work together.

Other deficiencies included the fact that there was no definitive mission statement, no estimate of the problems that could be encountered or how they would be dealt with, and, as before, there were no maps. The special staff was hamstrung, which forced SSF HQ to make assumptions about equipment, lift, and operating conditions for the contingent. These ad hoc solutions were made to work, but not without a great deal of aggravation.[86] The initial plan for Operation MATADOR was an air movement of personnel and a sea movement of vehicles and equipment via commercial carrier. In the middle of the deployment, fighting broke out and delayed portions of the deployment. Eventually, 89 CLU arrived and was in operation by 12 April 1989.

The different nature of this UN operation was also evident to some Canadian planners. Unlike traditional "thin blue line""peacekeeping, this mission was the shape of things to come in the 1990s:

> UNTAG was a transition to independence, a de-colonization mission that involved large military, police and civilian components. Traditional peacekeeping tasks overlapped with the supervision of elections and the involvement in security issues. Probably because UNTAG was not a classical peacekeeping mission, its structure lacked coordination and leadership. Because of this the [UNTAG organization]...was illogical.[87]

Canada was entering a new era, one in which a more sophisticated approach..was required

The lesson here was not only that Canada had to re-organize its command and control elements in Ottawa: Canada was entering a new era, one in which a more sophisticated approach to Third World intervention was required. Operations BANDIT and VAGABOND were not isolated occurrences that could be handled by ad hoc means. Operation MATADOR should have been a warning, but the lack of participation by Canadian combat forces ensured that the lessons learned and analysis were dismissed as just another ad hoc service support UN job in a nasty, far away country.

FROM THE LITTLE/HUNTER STUDY TO OKA: 1989-1990

Despite the problems encountered on Operations BANDIT, VAGABOND, and MATADOR, these experiences contributed to the creation of the J-Staff in 1990. Impetus was also provided by an NDHQ study called "The Functions and Organization of National Defence Headquarters in Emergencies and War," better known as the Little/Hunter Study, named after its authors. This study, commissioned by CDS General Paul Manson in April 1988, was undertaken as part of the 1987 White Paper restructuring. The study reflected Manson's view that the organization of NDHQ "may not be the most appropriate in the event of emergency or war."[88] The principle authors of the study were Major-General W.E.R. Little and Mr. S.P. Hunter, with Lieutenant-General John De Chastelain as the director.[89]

After a great deal of research, the authors concluded that "there is no indication to indicate that emergencies and war were major considerations" in the development of NDHQ organization since 1968. There were "considerable transition problems" between peace, emergency, and war, which were highlighted by Operations BANDIT and VAGABOND. "A sufficiently detailed crisis management system that provides for a graduated response to crises of varying intensity" was desperately required, as was "more clearly defined arrangements for command and control of combined and joint operations." There was, in fact, no express policy for what we now call operations other than war (OOTW) or low intensity conflict (LIC). NDHQ barely had the capability to transition from peace to a mid-to-high intensity war in Europe.[90]

The source of these problems lay in the weakness in the relationship between the DCDS group, ADM(Pol), and ADM(Mat). Responsibilities were blurred, authority was not clear, and there were problems in that the "organizational and resource programs caused problems between groups," a polite way of saying that there was serious bureaucratic competition and infighting in NDHQ between these groups.[91]

The key issue, as identified by the Little/Hunter Study, was the question of the "appropriate balance between central (joint) and environmental staffs within a unified or integrated headquarters?" The authors critically noted "this problem has been identified by every NDHQ organizational study since unification in 1968." In essential terms, "the current central staff [the DCDS] is inadequate to provide properly coordinated, unified advice...and the

environmental staffs are too parochial," which also produced inadequate advice. In effect, the DCDS was incapable of handling joint planning. The DCDS could not provide environmental advice to the CDS either. Furthermore, there was a duplication of effort between the DCDS, the environmental staffs, and ADM(Pol).[92]

Hunter, Little, and De Chastelain developed several options. They were, however, constrained by the terms of reference for the study, which told them that the CF was to remain a unified force, that NDHQ remain combined, and that the CDS and Deputy Minister remain as co-equals.[93] The study group struggled to find ways to solve the problems within these unrealistic parameters and came up with four options. The first was to retain the status quo. The second was to maintain a similar organization, but dual task commanders of Mobile Command, Maritime Command, and Air Command as the Chief of Army Operations, Chief of Naval Operations, and Chief of Aerospace Operations so that they could give direct, environmental advice to the CDS. They would each have command functions and advisory functions, which would preserve unification but allow for direct access on operational, logistical, and personnel matters. The DCDS would be expanded to improve the environmental commanders' responsiveness to DCDS's operational requirements.[94] The third option was similar to the second in that the DCDS was strengthened to facilitate operational planning, but the three advisory positions were left out. The final option had all environmental commanders, plus the other commands—Canadian Forces Communications Command, Northern Region Headquarters, and Canadian Forces Europe-—reporting directly to the CDS. The doctrine and operations functions residing in the DCDS group would then be split up and placed under the three environmental commands, which would decrease the workload on the DCDS and allow him to focus operational planning.[95]

In analysing the options, the study group used the following criterion: what was the best structure to facilitate the transition from peace to war? The fourth option was best, they reasoned, followed by number three. The second was rejected as a peacetime establishment because "it would give too great an appearance of de-unification." Essentially, the study group was concerned with muting anything that "could give rise to the perception of de-unification." In effect, they really wanted to de-unify but could not do it blatantly.[96]

The discussion then swung to the DCDS organization. How was the re-organization recommended by P2/86 doing? Could this be modified to solve the problems? Unfortunately, P2/86 had not been fully implemented. In 1988 conflicts arose between the DCDS group and ADM(Pol) over who should serve on what committees, and this delayed the policy directive's implementation.[97]

Joint Operations remained a serious problem. The study group clarified that there were two command and control procedures if joint operations were required. The first was that the CDS could task the commander of a command to conduct an operation and task other commands to provide support (like Operation VAGABOND). The second was that the CDS could order the formation of a task force and appoint a task force commander. The task force would be formed by the CDS directing the commands to provide the resources necessary for the operation (like Operation BANDIT).[98]

As we have seen, there were problems with both approaches. The Little/Hunter Study noted that the central staff at NDHQ—the Minister, the DM, and ADM(Pol)—might see the operation "as so delicate that political and media sensitivities require the...retention of command and control at the highest levels." The study group failed to note that, because of the speed and thus impact of the media, this would happen in every case of military involvement in a crisis, no matter how minute that involvement. Additionally, the environmental command headquarters were not organized to command and control joint operations (though, as we will recall, they had been during unification, particularly Mobile Command). Finally, the study group was concerned that "there may be a tendency for NDHQ staff to involve themselves inappropriately in the *execution* of an operation," a pervue which should always be left to the commander of the group in the area of operations.[99]

In its conclusions, the Little/Hunter Study suggested that the DCDS needed reorganization and that the role of the environmental commanders should be clarified. ADM(Mat) needed a crisis capability to respond to short-term emergencies. These alterations, they noted, were useless without the adoption of a DND-government crisis management operational concept and the development of joint doctrine to implement it.[100] The basic concept underlying the NDHQ crisis management system is the formalization, within the existing functionally organized, unified and military/civilian integrated NDHQ structure, of a joint staff system that brings together departmental and CF expertise....[101]

In essence, the proposed system was to consist of five graduated responses. As a minor crisis escalated to a major crisis, the existing NDOC and the National Defence Intelligence Centre (NDIC), which were already manned on a 24/7 basis, would become the J3 (Operations) and J2 (Intelligence) respectively. They would then be joined by three group response cells: J1 (Personnel), J4 (Logistics) and J5 (Civil-Military Relations). These would work on a 24/7 basis throughout the crisis. If the crisis expanded, a Crisis Action Team (CAT) would be activated by the J3 to prevent staff overload of the NDOC. Several CATs could be formed if necessary. To prevent staff overload at the VCDS/DCDS level, a Crisis Response Committee could then be formed to handle one or more CATs. The final stage was a Crisis

Management Group, which could be formed by the DM and CDS.[102]

The theoretical basis of what would become the J-Staff was embedded in the Little/Hunter Study and in the incremental developments that had taken place just prior to and after Operation VAGABOND in 1988. This, however, did not mean that the formal generation of the Joint Staff was inevitable, and it would take the dual-headed snake of the 1990 Oka and Gulf War crises to make it so.

Part II will examine the formalization of the J-Staff in 1990 and the attempts to preserve its unique capability in the years thereafter.

ABOUT THE AUTHOR...

Dr Sean Maloney received his BA and MA from the University of New Brunswick and his PhD from Temple University in Philadelphia. His military service included duty with the 8th Canadian Hussars (Princess Louise's) as a troop officer and an appointment as the official historian to 4 Canadian Mechanized Brigade Group. His writing and research focuses on Canadian national security policy. Dr Maloney's publications include "War Without Battles: Canada's NATO Brigade in Germany, 1951–1993" (1997), "Canada and UN Peacekeeping: Cold War by Other Means, 1945–1970"(2002), "Chances for Peace: Canadian Soldiers in the Balkans, 1992–1995" (2002), numerous articles, and the forthcoming book "Learning to Love the Bomb: Canada's Cold War Strategy and Nuclear Weapons, 1951–1968." He currently teaches in the War Studies Department of The Royal Military College of Canada and is a Research Fellow at the Queen's University School for Policy Studies. Dr Maloney is also the Academic Advisor to "The Army Doctrine and Training Bulletin" and regularly contributes articles and commentaries.

ENDNOTES

1. Gunter E. Rothenberg, *The Art of War in the Age of Napoleon* (Bloomington: Indiana University Press, 1980), p. 210.
2. Access to Information (ATI), DND, (11 Jan 93) Briefing Note: "Future Contingency Operations: Force Planning and Development for Contingency Operations."
3. Note that attempts to move Canadian defence policy away from NATO really were initiated by the Trudeau Government in 1968. The objectives of that attempt were not to shift Canadian military focus from NATO to global operations, however. The objective was to effect economic savings coupled with the perceived need to focus on internal security and sovereignty operations after the FLQ Crisis of 1970.
4. National Defence, *1994 Defence White Paper* (Ottawa: Canada Communications Group, 1994). See 3-7, 12-15.
5. David C. Jones, "Past Organizational Problems," *Joint Forces Quarterly* Autumn 1996, pp. 23-28.
6. Ibid.
7. See Sean Maloney, "'Global Mobile': Flexible Response, Peacekeeping and the Origins of Forces Mobile Command, 1958-1964," *The Army Doctrine and Training Bulletin* 3,3 (Fall 2000), pp. 20-34, and "'Global Mobile II': The Development of Forces Mobile Command, 1965-1972," *The Army Doctrine and Training Bulletin* 4,2 (Summer 2001), pp. 7-23.
8. Email interview with Peter Haydon, 28 August 1998.
9. Directorate of History and Heritage (DHH), 80/225, letter dated 31 March 1980, CDS to MND, "Final Report-Task Force on Unification."
10. DHH, 81/747, "Task Force on Review of Unification of the Canadian Forces: Final Report 15 March 1980."
11. Ibid.
12. DHH, 91/91, "Review Group on the Report of the Task Force on Unification of the Canadian Forces, 31 August 1980."
13. Ibid.
14. ATI, DND, (6 Jul 81) memo EA/CDS to EA/DCDS, "Command and Control of the CF-NDHQ Policy Directive"; Draft NDHQ Policy Directive /81, "Command and Control of the Canadian Forces."
15. Interview with BGen (Ret'd) Ian Douglas, 11 September 1998.
16. ATI, DND, (21 Aug 81) memo to D NDHQ Sec, "Command and Control of the CF-NDHQ Policy Directive"; (7 Oct 81) ADM(Pol) to D NDHQ Sec, "ADM(Pol) Comments on Draft NDHQ Policy Directive on Command and Control in the CF"; (7 May 82) memo to D NDHQ Sec, "Command and Control of the CF-NDHQ Policy Directive"; (28 May 82) memo to distribution list, "Command and Control of the CF-NDHQ Policy Directive."
17. ATI, DND, (5 Apr 83) NDHQ Policy Directive P1/83, "Command and Control of the Canadian Forces."
18. Ibid.
19. Ibid.
20. Douglas Bland, *Chiefs of Defence: Government and the Unified Command of the Canadian Armed Forces* (Toronto: Canadian Institute for Strategic Studies, 1995), pp. 245-252.
21. DHH, General Theriault, interview transcript 17 December 1992.
22. The Loomis Study, pp. 167-178.
23. Ibid., p. 83.
24. ATI, Privy Council Office, (28 Oct 68) memo to Cabinet, "Canadian Military Contribution to NATO Europe."
25. Sean Maloney, *War Without Battles: Canada's NATO Brigade in Germany, 1951–1993* (McGraw-Hill Ryerson, 1997), pp. 277-278.
26. "Exercise RUNNING JUMP II," *The Connecting File* 1971 edition, p. 89; Rock Michon, "For a While...Gagetown Meant Northern Europe," *Sentinel* January 1972, pp. 13-18.
27. ATI, DND, (30 Mar 87) memo to distribution list (dl), "Exercise BRAVE LION Post Exercise Report (PXR)."
28. Interview with BGen (Ret'd) Ian Douglas, 11 September 1998.
29. ATI, DND, (13 Feb 87) "Director General Military Review (Trial) 1/86 Report Exercise BRAVE LION: Part II Analysis of Potential Issues for Detailed Review."
30. Ibid.
31. Ibid.
32. ATI, DND, (Feb 1984) memo to CDS, "CAST 86: Request for Formal Approval."
33. Email interview with Peter Haydon, 28 August 1998; ATI, (13 Feb 87) "Director General Military Review (Trial) 1/86 Report Exercise BRAVE LION: Part II Analysis of Potential Issues for Detailed Review."
34. ATI, DND, (13 Feb 87) "Director General Military Review (Trial) 1/86 Report Exercise BRAVE LION: Part II Analysis of Potential Issues for Detailed Review."
35. ATI, DND, (4 Nov 86) memo to Director General Military Review (DGMR), "Ex BRAVE LION-DGMR Report."
36. Bland, *Chiefs of Defence*, pp. 245-252.

37. ATI, DND, (24 Oct 86) NDHQ Policy Directive P2/86, "The Operation and Organization of National Defence Headquarters."
38. Letter Access to Information and Privacy (ATIP) to Maloney, 25 February 1998.
39. This section is in part drawn directly from another study, "Maple Leaf Over the Caribbean: Gunboat Diplomacy Canadian-Style," a conference paper given by the author in Halifax, June 1998 and subsequently published in a compilation entitled *Canadian Gunboat Diplomacy: The Canadian Navy and Foreign Policy*, edited by Ann Griffith, Richard Gimblett, and Peter Haydon (Halifax, NS: Centre for Foreign Policy Studies, 2000).
40. ATI, DND, (18 Dec 87) "Potential Evacuation of Canadian Citizens from Haiti: Codename Op BANDIT"; ATI DND, (15 Jul 88) "Operation BANDIT After Action Report."
41. ATI, DND, (18 Dec 87) "Potential Evacuation of Canadian Citizens from Haiti: Codename Op BANDIT."
42. ATI, Department of External Affairs (DEA), (4 Jan 88) memo from Michael Bell for The Minister for External Affairs, "Haiti."
43. Ibid.
44. ATI, DEA, (n/d) Memorandum for the Prime Minister,"Haiti: Options for Canadian Policy."
45. ATI, DEA, (4 Jan 88) memo from Michael Bell for The Minister for External Affairs, "Haiti."
46. Joe C.W. Armstrong, *Farewell the Peaceful Kingdom* (Toronto: Stoddart Books, 1995), Ch. 13.
47. ATI, DND, (4 Jan 88) "National Defence Logistics Coordination Centre SITREP Operation BANDIT as of 0600 hrs 04 Jan 88."
48. ATI, DND, (4 Jan 88) Briefing Note for the Minister of National Defence, "Operation BANDIT Update."
49. ATI, DND, (18 Dec 87) Aide-memoir for the MND, "Op BANDIT."
50. ATI, DND, (21 Dec 87) message NDHQ to MARCOM HQ, "Op BANDIT SITREP."
51. ATI, DND, (30 Dec 87) message NDHQ to all commands, "Op BANDIT WNGO."
52. ATI, DND, (4 Jan 88) Briefing Note for the Minister of National Defence, "Operation BANDIT Update."
53. ATI, DND, (5 Jan 88) National Defence Logistics Coordination Centre SITREP Operation BANDIT as of 0600 hrs 05 Jan 88.
54. ATI, DND, (10 Feb 88) memo to DCDS, "Short/No-Notice Exercises: Media Reaction to DND Activities."
55. ATI, DND, National Defence Logistics Coordination Centre SITREP Operation BANDIT as of 0600 hrs 08 Jan 88.
56. ATI, DND, message NDHQ to MARCOM HQ, Op BANDIT SITREP 9 Jan 88.
57. ATI, DND, (11 Jan 88) National Defence Logistics Coordination Centre SITREP Operation BANDIT as of 0600 hrs 11 Jan 88.
58. ATI, DND, (19 Jan 88) message NDHQ to distribution list, "Op BANDIT: The need for flexibility in contingency planning."
59. ATI, DND, message CDS to CTF 300.
60. ATI, DND, National Defence Logistics Coordination Centre SITREP Operation BANDIT as of 0600 hrs 19 Jan 88.
61. ATI, DND, (18 Mar 88) memo Director Transportation Resources and Plans (DTRP) to Director Military Operations Coordination (DMOC), "Op BANDIT After Action Report"; (3 Mar 88) memo to DMOC, "Op BANDIT Lessons Learned."
62. ATI, DND, (15 Jul 88) DCDS to dl, "Operation BANDIT After-Action Report."
63. ATI, DND, (18 Mar 88) memo to Director General Military Plans and Operations (DGMPO), "Op BANDIT-After Action Report Communications and Electronics"; (1 Jun 90) memo to Director Maritime Operations Plans and Reserves (DMOPR) 2, "Op BANDIT After Action Request Update."
64. ATI, DND, (28 Sep 88) memoVCDS to dl, "Operation BANDIT After Action Report."
65. Ibid.
66. ATI, DND, (15 Jul 88) DCDS to dl, "Operation BANDIT After-Action Report."
67. Brian Smith, "United Nations Iran-Iraq Military Observation Group," in William Durch's, *The Evolution of UN Peacekeeping: Case Studies and Comparative Analysis* (New York: St. Martin's Press, 1993), pp. 236-257.
68. "Persian Gulf Deployment," *Sentinel*, 1988/6, p. 21.
69. Confidential interview.
70. Interview with BGen (Ret'd) Ian Douglas, 11 September 1998.
71. Ibid.
72. Ibid.
73. Ibid.
74. ATI DND, (24 Nov 88) Special Service Force (SSF) HQ, "Operation VAGABOND After Action Report."
75. Ibid.
76. ATI DND, (28 Nov 88) A/DGMPO to DCDS "Operation VAGABOND Lessons Learned."
77. Note that this term was in use from the 1960s to the 1980s and that it is very similar to the 1990s American term "operations other than war."
78. ATI DND, HQDP 900, "NDOC Augmentation: Operations Short of War or National Crises."
79. Confidential interviews.
80. Virginia Page Fortna, "United Nations Transitional Assistance Group Namibia," in William Durch's *The Evolution of UN Peacekeeping: Case Studies and Comparative Analysis* (New York: St. Martin's Press, 1993), pp. 353-376.
81. ATI, DND, (24 Feb 89) memo to MND, "CF Participation in United Nations Transition Assistance Group (UNTAG) for Namibia,"; (4 Jun 90) "UNTAG Evaluation: DND Participation."
82. Ibid.
83. ATI, DND, (4 Jun 90) "UNTAG Evaluation: DND Participation."
84. ATI, DND, (15 Mar 89) "Peacekeeping Support-Namibia."
85. ATI, DND, (4 Jun 90) "UNTAG Evaluation: DND Participation."
86. Douglas interview; confidential interviews.
87. ATI, DND, (4 Jun 90) "UNTAG Evaluation: DND Participation."
88. ATI, DND, (February 1989) Final Report, "NDHQ Study Directive S1/88: The Functions and Organization of National Defence Headquarters in Emergencies and War." [hereafter referred to as the Little/Hunter Study]
89. ATI, DND, (18 Apr 88) memo NDHQ Secretariat to dl, "NDHQ Study Directive S1/88: The Functions and Organization of National Defence Headquarters in Emergencies and War."
90. Little/Hunter Study, pp. ii, 4-4, 4-8.
91. Ibid., pp. 4-1, 5-1.
92. Ibid., pp. 5-1 to 5-3.
93. Ibid., p. 1-2.
94. Ibid., pp. 5-13 to 5-16.
95. Ibid., p. 5-17.
96. Ibid., pp. 5-26 to 5-27.
97. Ibid., pp. 6-1 to 6-3.
98. Ibid., p. 6.8.
99. Ibid.
100. Ibid., p. 7-1.
101. See Annex U to NDHQ Study S1/88 Final Report, "Outline Concept for an NDHQ Crisis Management System."
102. Ibid.

The Return of the Canadian Mounted Rifles

by Sergeant Arthur Majoor, CD

INTRODUCTION

Doctrine is a guide to how we accomplish our goals. A well thought out and practiced doctrine has an amazing multiplier effect for the users. Units organized to take advantage of the ideas and principles put forth in doctrine are flexible and effective tools for the commander. The Canadian army has adopted "manoeuvre warfare" as the cognitive tool to design its future doctrine. We understand the theory, but now we need to convert theory into action by creating structures and equipping units so the Army can execute manoeuvre warfare.[1]

Historically, defence issues and military spending have been a low priority for the Canadian government. Creating major new Canadian Forces (CF) units from scratch, or purchasing large quantities of the latest high tech hardware to support manoeuvre warfare is not very likely.[2] Even though the CF is now participating in a global campaign against terrorism, the Prime Minister has publicly stated that there will be no new spending on defence.[3] The question then is: how can the ability to perform manoeuvre warfare grow organically from existing resources? One solution may come from our military history.

THE ORIGINAL CANADIAN MOUNTED RIFLES

The many small colonial wars the British Empire fought during the reign of Queen Victoria impressed on some officers the need for fast moving, hard-hitting units to deal with native and irregular troops. Marching columns of infantry were too slow to catch raiders, while cavalry armed with the traditional swords and lances had only limited utility in this form of war. The evolution of the United States (US) Cavalry during the American Civil War pointed the way to the future. For much of that war, cavalrymen used their mounts to get to fighting positions, but often fought dismounted. Although traditional cavalry fights did happen throughout the war, the dismounted actions tended to have a greater impact on battles.[4]

The officer who put these lessons into action for the British Army was Major General Edward T.H. Hutton. An experienced officer with service in the Zulu War and in Egypt, and commander of the colonial forces in New South Wales, he founded the Mounted Infantry School in Aldershot, England. Believing traditional cavalry to be obsolete, he created a force that combined the mobility of mounted soldiers with the firepower of rifle-armed infantry. He succeeded so well, that mounted infantry became a recognized branch of the Army, and remained so for many years.[5] They could "apply themselves quickly to any spot in a fight, support and supplement independent cavalry actions, and take over screening duties."[6]

the need for fast moving, hard-hitting units is urgent

As General Officer Commanding in Canada, he was involved in creating the first Canadian contingent that fought in the Boer War. Two mounted infantry units (styled as the "Canadian Mounted Rifles" or CMR) were raised from the Permanent Militia, Non-Permanent Militia and North-West Mounted Police as part of the first contingent. 1 and 2 CMR were organized into two squadrons of six officers, 154 men and 161 horses. Each squadron had four troops of about 40 men. In practice, some men were detached, either as "horse holders" (one man in four handled the animals while the other three fought), or performing the various duties required to attend to the horses. Each squadron also had machine gun sections armed with air-cooled Colt machine guns.[7] Tactically, mounted infantry were trained to work around the flanks of the enemy. When ordered to attack, they would gallop forward and dismount. While the horse-holders took charge of the animals, the others fought on foot with their Lee-Enfield rifles and machine guns. Mounted infantry were also valuable in providing security to marching columns and providing flank and rear security by patrolling. The only thing the mounted infantry lacked was a means to press home the attack while on horseback.[8]

The CMR performed admirably during the Boer War, and the Army raised fourteen such battalions during the First World War.[9] The conditions of trench warfare precluded the use of mounted infantry in their mobile role, and advances in military technology made horses in front line combat obsolete. The CMR disbanded after the end of the First World War, and mounted infantry ceased to be a separate branch of the Army soon thereafter.

CREATING MANOEUVRE WARFARE UNITS FOR TODAY

The need for fast moving, hard-hitting units is as urgent today as it was in the time of Queen Victoria. Canadian troops have been heavily

involved in low intensity conflicts (LICs) and operations other than war (OOTW) since the early 1990s, and the situation seems unlikely to change in the near future.[10] These types of operations require the ability to patrol wide areas and rapidly concentrate troops in areas of interest. High intensity warfare also places increasing reliance on the ability to move quickly, to concentrate force against the enemy at unexpected times and places (the essence of manoeuvre warfare), and to disperse the force for protection against enemy actions. The limited availability of strategic lift to bring forces to areas of conflict implies the need for light forces. The mobility of traditional mechanized forces in theatre is limited by the poor infrastructure in third world countries and nations shattered by conflict[11] (not to mention the large-scale presence of land mines). This combination of factors suggests an airmobile force is best suited to perform manoeuvre warfare. Instead of attempting to destroy threats at a distance through airpower, commanders will need dismounted soldiers to find and destroy enemy troops and war material on the ground.[12]

BUILDING THE NEW CANADIAN MOUNTED RIFLES

The traditional idea of "air cavalry," using helicopters to transport and insert light infantry into the area of interest, is limited by the dismounted infantry's low mobility and ability to sustain only short operations once on the ground. Airmobile forces cannot insert into "hot" landing zones unless those landing zones are prepared by fire and provided with some sort of over watch to assist the troops once on the ground.[13] Wealthy nations can afford to "bulk up" their air cavalry with powerful (and expensive) attack helicopters and fleets of transport helicopters for sustainment. We need a different approach, since this is not a financially viable option for Canada. The greatest strength of the CMR was their ability to provide an overwhelming weight of *dismounted* fire, and their *ability to seize key terrain*.[14] Recreating the CMR will be a multi-stage program: first by increasing the dismounted fighting power of light infantry through new organizational models and weapons, then by adding the superior mobility of organic helicopter support.

The Army has the core elements needed to create such units. Three light infantry battalions exist in the order of battle. Each unit's basic organization is built around a parachute company, an airmobile company and a BV-206 company.[15] These capabilities lend themselves to rapid movement, with the organic ability to move by aircraft and helicopter, and a heavier organization able to support the airmobile elements on the ground. Current equipment allows light infantry some ability to engage enemies at all levels of conflict, and integration of new technologies and techniques such as Tactical Command Control and Communications System (TCCCS) and intelligence, surveillance, target acquisition and reconnaissance (ISTAR) increases the abilities and effectiveness of the basic unit by providing improved communications and intelligence.

Advanced organization and communications (sometimes referred to as "network centric" warfare) gives the dismounted soldiers direct access to resources, from the firepower of the battalion to battle group artillery and aviation. If conditions permit, the dismounted CMR soldiers could manoeuvre to direct and support punishing stand off firepower against the enemy. In other circumstances, the CMR battalion would use fire and movement to perform the mission. American special forces used these tactics in Afghanistan against Taliban and Al Qaeda forces, attacking strong points with B-52's, or directing air strikes in support of the Northern Alliance forces on the ground. The development of ISTAR brings information from many sources into a command post (CP) clearing-house to allow for the efficient access and use of brigade assets.[16] A unit with the speed and reach of the CMR would not only make great contributions to the brigade ISTAR suite, but would also benefit from a streamlined information clearing house (coordination cell) at the unit level as well.[17]

Increasing the battalion's organic firepower gives the CMR more options when external resources are unavailable. Platoons carrying Carl Gustaves and Eryx have only limited abilities to engage enemy armour and no protection against helicopters. Man-portable weapons have improved over the last decade, and it is now possible to give dismounted troops the tools to engage a wider range of targets under all conditions. A two-man team can carry the US Javelin[18] or similar fire and forget weapons. Missiles like this have some anti-aircraft ability, can deal with tanks out to 2000 m, and have thermal imaging sight units for day, night and all weather engagements.[19] The replacing of Carl Gustave and Eryx with more potent weapons will make the dismounted soldiers a more formidable force.

The 2nd Canadian Mounted Rifles on the veldt in the Transvaal, March 1902. Is the doctrinal dilemma that inspired their formation applicable today? (Courtesy National Archives of Canada)

Evolving from the BV 206 company, a "motor company" will give the CMR a unique ability for sustained operations that an all-air unit lacks. The motor company has enhanced mobility on the ground, few weather restrictions, and can carry more supplies for extended operations than the dismounted infantry companies. As a secondary function, the motor company can support airmobile operations by delivering supplies to dismounted infantry, freeing the lift company for other tasks and extending the

Sergeant Arthur Majoor, CD

time the airmobile company can remain in the field. Operationally, the motor company can share the benefits of air mobility, since medium-lift helicopters can airlift the BV 206 or similar vehicles. The limitation is the amount of airlift available, meaning air movement by the motor company will be slower and more complex than airmobile infantry company movements. While the airmobile companies can move rapidly around a wide area of operation, the motor company is more suited for "landholder" duties, securing areas or "digging out" opponents who have been identified and fixed by the airmobile companies.[20] In areas of complex terrain that masks the enemy from sensors and standoff attack, this will become a key asset for successful operations. The motor company will need to maintain all-terrain capabilities. The BV 206 can undergo a modernization program, upgrading the engine and suspension systems to improve mobility, or the Army can choose a successor vehicle.

To improve battlefield awareness and effectiveness, the CMR battalions need specialized augmentation. In the US Air Cavalry, the Regimental Aviation Squadron (RAS) supports the Assault Helicopter Troop (AHT) with troops of electronic warfare (EW), scout and (in an Armoured RAS) attack helicopters.[21] This is an expensive solution in terms of acquisition (an AH-64 Apache costs about $17 million US), and ongoing support of three fleets of different aircraft. The Air Force is preparing to field the Electro-optical Reconnaissance, Surveillance and Target Acquisition (ERSTA) suite starting in 2005, and may add weapons capabilities to the Griffon as a follow-on project, but as brigade resources, they will not always be available to the CMR.

A means of gaining these important capabilities in house without "breaking the bank" is to use a robust unmanned aerial vehicle (UAV) to perform these functions. Canadian experiments are underway using rented light aircraft to simulate the use of UAVs, and the experience gained here is transferable to the CMR.[22] A platoon of UAVs, used in a recce role, provides situational awareness for the unit. UAVs can fulfill other requirements in a CMR battalion, such as communication platforms to extend the range of the command, control, communications, and intelligence (C3I) systems. In place of the anti-armour platoon, a UAV attack platoon can provide heavy direct firepower for the CMR. Readers objecting to the lack of a cannon for close support and the small number of missiles a UAV would carry should remember that an armed Griffon would have similar limitations.[23] American "Predator" recce UAVs have been outfitted with Hellfire anti-armour missiles for the Afghanistan campaign of 2001-02,[24] demonstrating that a robust UAV platform can be adapted to fulfill many roles. The adoption of a dedicated UAV fleet, and accepting and working around the limitations of unmanned platforms[25] to perform these duties for the CMR also frees Canadian tactical helicopter resources for other tasks.

For operational mobility, the CMR needs *integrated* aviation assets, such as in an American RAS. Each Canadian light infantry battalion has an associated helicopter squadron, but this is a brigade asset, not always available to the battalion. A Griffon can lift 3900lbs (1772kg), with the mid-life upgrade in 2010 potentially increasing lift to 6900lbs (3136kg).[26] It is currently difficult to perform a company lift with each soldier carrying up to 45kg of equipment and consumables, and the additional equipment for winter operations makes a single lift by an 18 Griffon squadron almost impossible.[27] Once equipped with ERSTA and weapons, it will be more difficult to provide Griffons in sufficient numbers for troop-lift given the high demand for these services at brigade level.[28] Dedicated medium lift helicopters are required. Getting these helicopters in sufficient numbers to provide organic lift to the CMR battalions (a lift company of 16 medium helicopters)[29] will take some doing, but there are stocks available of used helicopters such as older model Blackhawks, or Russian "Hips." Purchasing and refurbishing older helicopters may be the only cost-effective way to gain this capability, and at the same time, free the tactical helicopter squadrons for other duties.

ORGANIZING THE CMR

The new CMR will need an advanced organization to take advantage of their capabilities. A possible order for battle (ORBAT) for the CMR includes:

HQ Company:

HQ platoon (Coordination cell + Aviation cell)

Pathfinder platoon

Signals/C3I platoon

Admin platoon

Airmobile infantry Company (X 2)

Motor Company (BV 206 or successor)

Lift Company:

CP helicopter.

Three platoons (5 X medium lift helicopters each) to ferry a fully equipped light infantry company. (The number of helicopters in a platoon depends on the lift capability of the model selected)

UAV Company:

UAV recce platoon

UAV C3I support platoon

UAV attack platoon

Ground Support platoon

Support Company + Aviation Maintenance platoon

Command and control of a CMR battalion will be very challenging. Integral air mobility gives the unit the ability to cover a very large area of operations, while a unit with seven company sized sub units creates a very wide span of command. A coordination cell would give the unit headquarters an information clearinghouse to effectively command and control a large and widespread organization. An aviation commander and aviation cell at headquarters level might also

be required to manage aviation functions for the lift and UAV companies.

To see how it might work, consider the following scenario. During an operation, a high value target is located as it moves between locations in the CMR sector. Attack UAVs are launched to piquet the target, while an airmobile company is scrambled. As the company approaches the position, the Lift company assumes control of the attack UAV platoon to escort the helicopters to the landing zones (LZs). Both the lift and airmobile company commanders view target area information from recce UAVs, Pathfinders and other sources on their situational awareness boards, using the information to quickly plan and request fire and air support. The lift company commander concentrates on suppression of enemy air defences (SEAD) to support the final run to the LZs, while the airmobile company commander works out the fire plan for his mission on the ground. As the lift company sets down on the LZs, the airmobile company takes control of artillery, external air assets and any attack UAVs that are still available. The unit aviation cell coordinates airlift and the hand-offs of the UAV assets, while the coordination cell does operational planning procedure (OPP), manages manpower and logistics, and forwards requests for air and artillery to the battlegroup headquarters.

Service support for a fast moving, wide-ranging unit will also be very challenging. Data from the unit aviation and coordination cells will provide support company with a means of anticipating and meeting logistics needs for the unit. For "day to day" work, the airmobile companies would do what light infantry always do: consume what they can carry, and move to delivery points (DPs) or drop zones (DZs) for re-supply. The secondary duty of the AHT in a RAS is to ferry supplies for the remainder of the RAS.[30] The motor company can also drive supplies to dismounted airmobile companies as their secondary duty. There is no combat support coy, since the UAV coy takes recce and the anti-armour platoon (AAP) functions, while force reductions have led to the elimination of mortar and pioneer platoons in the battalion structure.

a sustained process of experiment and change is required to bring together the many techniques and technologies into an effective whole

In the 1960s Canada was on the leading edge of air mobile concepts and development. Here troops demonstrate the carrying capacity of the CL-84 Dynavert in 1969. Since then, we have been dancing on the edges of this capability. (Courtesy CFPU)

GETTING THERE

Recreating the Canadian Mounted Rifles will not be easy. A sustained process of experiment and change is required to bring together the many techniques and technologies into an effective whole, creating a manoeuvre unit with effective *dismounted* fire and the *ability to seize key terrain*. The ideas that make the CMR an effective unit apply throughout the rest of the Army, increasing the effectiveness of everyone on the ground. An action plan spanning the next decade will create an effective, hard-hitting unit that can support manoeuvre warfare doctrine. Although *new* funding might not be available, examining existing budgets can reveal poorly allocated resources. As was pointed out in another context, "there is seldom a shortage of money for new computers, new desks and the landscaping requirements of bases."[31] Clearly, resources do exist to create manoeuvre warfare units, if we have the desire and will.

Organizational change is easiest to model and practice, using quick and low cost experiments. Robust portable communications and the ability to transfer visual data (map traces, still photos and live video of targets) throughout the unit are essential.[32] TCCCS and follow-on systems are providing the building blocks for these capabilities now. Moving to a form of network centric warfare with a large increase in TCCCS and associated equipment from the half-section to the company level, and a coordination cell at the battalion level gives the dismounted troops rapid access to resources when they need them. The rest of the Army, both regular and reserve, can also adopt the successful network centric model to multiply combat effectiveness. The hardest thing to overcome will be resistance to change: a successful network centric model will be very different from current concepts of chains of command or hierarchical structures.

Increasing the dismounted firepower of the dismounted infantry requires a large investment for new weapons, training and support equipment. Dismounted soldiers need better weapons to deal with hard targets, armour and helicopters, regardless of the unit type. The day/night and thermal imaging capabilities of sight units also expands the situational awareness of units equipped with these weapons. Since a rearming program benefits a larger community

Sergeant Arthur Majoor, CD

of users, there should be an Army wide basis of support for this initiative.

Another large investment is the ground leg of the CMR, the motor company. A BV 206 mid life upgrade will maintain a capability that does not exist with any other vehicle in the Army's inventory. Any proposed replacement would need equal or greater mobility, and be air-portable. Since the BV 206 exists in limited numbers, it may be difficult to justify spending the money on upgrades or replacement. However, the advantages of a motor company to the proposed CMR makes this an important option to pursue. The two airmobile companies in the CMR are weather and lift dependent, while the motor company gives the unit extended capabilities independent from air mobility.

Specialized support aircraft will provide the CMR with situational awareness, extended C3I support when operating over large areas of operations (AOs) and direct fire support when needed. To ask for fleets of Kiowa Warriors, EH-60 "Quick Fix" electronic warfare helicopters and attack helicopters for these jobs is simply out of the question in terms of purchase price and ongoing support costs. Current experiments with rented light aircraft give the Army some experience with the use of UAVs in the reconnaissance role. The scheduled arrival of ERSTA equipped helicopters in 2005 will increase the opportunities for dismounted soldiers to practice with airborne sensor equipment. UAVs have demonstrated the ability to perform these tasks for a fraction of the cost of manned aircraft, so they are the logical approach for a limited budget. There will be more support to start a UAV program if the program can expand for the benefit a larger community of users outside the CMR, such as Artillery and Signals (recce UAVs as spotters, and C3I UAVs for communications tasks).

Air mobility may be the most difficult piece of the puzzle. The Griffon is not really a suitable troop lifter. When squadrons upgrade with ERSTA and weapons, they will be in high demand for other duties. Three squadron-sized subunits of medium lift helicopters, along with aircrew and associated support, are the minimum requirement to transform the light infantry battalions into CMR battalions. Integrated air mobility gives the CMR tremendous flexibility, increasing the range of options available to the unit and formation commander. Many factors, such as proposed purchases of suitable similar helicopters for the Canadian Navy or other government agencies, available funding, and political considerations will impact on when and if airmobile units should be created with integrated air assets. The ideal situation would be to tap into an existing program to exploit economies of scale.

we must begin to work towards creating structures and equipping units to operate as manoeuvre warfare units

Although the outline of each step of recreating the CMR is presented in a sequential manner, adopting a parallel process for change and integration will create the CMR in a reasonable timeframe. Each step on its own increases the utility of the light infantry battalion (LIB) and other Army units and formations, but together in the new unit, the sum will be greater than the parts.

CONCLUSION

If manoeuvre warfare doctrine is the foundation of our future army, then we must begin to work towards creating structures and equipping units to operate as manoeuvre warfare units. The Canadian army needs to find approaches that grow organically from existing resources. To do otherwise is to court frustration and failure. We have three light infantry battalions in our order of battle, units with inherently flexible organizations and excellent soldiers. Using manoeuvre warfare doctrine as the cognitive tool, we can add together our military history, modern organization theory, technology and the strength of our light infantry organization as one means of creating manoeuvre warfare units to deal with the challenges of the future. It is time for the return of the Canadian Mounted Rifles.

The author wishes to thank LCol. Ian Hunt for his support and encouragement during the research and writing of the paper. Thanks as well to LCol. Scott McLeish and LCol. D.J. Banks for providing useful comments and information during the revision process.

ABOUT THE AUTHOR...

Sergeant Arthur Majoor holds a Business Finance Diploma from Fanshawe College and is currently enrolled in the Microsoft Certified Systems Engineer course. He joined the Canadian Forces in 1981 and served in the regular army until 1986 before transferring to the Reserve Force. His operational service includes a tour in Cyprus and disaster assistance during the Ice Storm in 1998. Sergeant Majoor is currently employed as the G6 IT Administrator with 31 Canadian Brigade Group Headquarters in London, Ontario and is a regular contributor to this journal.

ENDNOTE

1. LCol Ian Hope "Misunderstanding Mars and Minerva" *ADTB* Vol. 4 No 4 http://armyapp.dnd.ca/ael/adtb/vol_4/No_4/vol4_no_4_E.pdf (Winter 2001-2002, pg. 16-35).

2. Maj. Peter J Williams, "Which Way to the Beach? The Case for Amphibiosity" *ADTB* Vol. 3 No. 3 http://armyapp.dnd.ca/ael/adtb/vol_3/No_3/vol3_no_3_E.pdf, Fall 2000, pg. 48-52.

3. Robert Fife, Ottawa Bureau Chief. *National Post* 19 March 2002.

4. Edwin B Coddington, *The Gettysburg Campaign, a study in Command*, Scribner's 1968. In this most celebrated of Civil War battles, dismounted

actions by US Cavalry forces had a far greater impact on the outcome than the mounted cavalry actions that also took place during the campaign. Two examples are General Buford's dismounting 2 100 troopers of his First Division, while keeping his 1 800 man Reserve Brigade mounted "and us[ing] them as the movable end of a flail to beat the enemy" during the Battle of Brandy Station. (pg. 65); and opening the main action at Gettysburg with dismounted troops on McPherson's ridge (pg. 264). On the other hand, several "traditional" cavalry encounters in the same campaign seem to have had little impact on the outcome.

5. Brian A Reid, "Our Little Army in the Field", *Vanwell Publishing* 1996. Paraphrased from the chapter notes pg. 177, 178.

6. BGen. E.C. Bethune, "The Uses of Cavalry and Mounted Infantry in Modern Warfare", *RUSI*, Vol. 50 No. 339 (May 1906), quoted in *Forging a Nation* (LCol. Bernd Horn, editor, Vanwell, 2002) pg. 91.

7. Reid, pg. 34.

8. Reid, pg. 18.

9. http://www.canadiansoldiers.com/cmrcaps.htm, viewed Feb 2002 shows the cap-badges of the 1st to 13th CMR, as well as the Mounted Rifle Draft. 14th CMR is not represented in this page. This gives the reader an idea of the size and scale of the CMRs during the First World War.

10. Robert Kaplan, "The Coming Anarchy", *The Atlantic Monthly*; February 1994; Volume 273, No. 2; pages 44-76. Also available online at: http://www.theatlantic.com/politics/foreign/anarchy.htm. The factors that inflame conflict, such as disease, scarcity, and population migrations, seem set to increase in the coming decades. Samuel Huntington advances a similar theory in *The Clash of Civilizations and the Remaking of World Order*, Touchstone, 1997. Fred Pearce, "Blood, diamonds and oil", *New Scientist*, 29 June 2002, pg. 36-40. Conflicts in many countries become self-sustaining as local warlords finance their "cause" through the sale of easily available local natural resources. Sierra Leone may be one of the best known "honey-pot" war zones, as various factions fight over diamond deposits, but wars drag on throughout the world over control of resources as varied as narcotics crops, timber, minerals and oil fields.

11. Francis Tusa, "Is the West ready for the wars of the 90's", *Armed Forces Journal International*, July 1993, pg. 39-40. One of the observations is the 30 ton "Warrior" IFV has difficulty on the poor roads of Bosnia.

12. Tusa, pg. 39. An aircraft may observe a suspicious vehicle on a supply route, but be constrained from attacking by the presence of women and children riding in the load bed. An airmobile unit like the CMR can land a party to intercept and search the vehicle, allowing the commander a more flexible range of responses to the incident.

13. The movies *Blackhawk Down* (Columbia Pictures/Sony 2002) and *We Were Soldiers* (Paramount 2002) graphically illustrate the point. *Blackhawk Down* (Atlantic Monthly Press, 1999) by Mark Bowden describes the Battle of Mogadishu in 1993. *We Were Soldiers* is based on *We were soldiers once, and young* (Random House, 1992) by Lt. Gen. Hal Moore, an account of the battle of Ia Drang by the US 1/7 Air Cavalry in 1965. In each instance, the American ground forces relied on the availability of large amounts of helicopter gunship, or air and artillery fire to survive and win. For what happens when there is not enough preparation or overwatch, think of the fate of the British at Arnhem, or the French at Dien Bien Phu.

14. LCol Bernd Horn, *Forging a Nation*, Vanwell 2002, pg. 91.

15. Taken from http://www.dnd.ca/dcds/bosnia/default_e.htm viewed Feb 2002.

16. Capt. Dave Travers, "Brigade ISTAR Operations", *ADTB* Vol.3, No.4/ Vol. 4, No 1, pg. 43-49 http://armyapp.dnd.ca/ael/adtb/vol_3/No_4/vol3_no_4_E.pdf.

17. Instead of an ISTAR Table, the CMR Coordination cell would need a mobile network and display unit that could be folded up and transported by helicopter.

18. *Jane's Infantry Weapons* 1999-2000, http://janes.mil.ca/data/yb/jiw/jiw2000/jiw_0808.htm viewed on the DIN Jul 2002.

19. For example, the Gill/Spike system from Israel, http://janes.mil.ca/data/yb/jiw/jiw2003/jiw_0758.htm viewed on the DIN Jul 2002.

20. "Norway's Jeger units: light, fast and tough", *Jane's Defense Weekly*, 4 March 1998 pg. 28-30. The organization of Jeger units makes the Company commander the "Landholder" of a designated area, with virtually unrestricted freedom of action. He will normally split his company area into platoon areas, and delegate operations that will be carried out by at squad level.

21. Taken from FM 1-114, chapter 1. See also http://www.adtdl.army.mil/cgi-bin/atdl.dll/fm/1-114/toc.htm viewed Jul 2002.

22. Col. Glenn Nordick, "Exploiting Opportunity: Thoughts on ISTAR", *ADTB* Vol.3, No.4/ Vol. 4, No 1, pg. 1 http://armyapp.dnd.ca/ael/adtb/vol_3/No_4/vol3_no_4_E.pdf. Using light aircraft in this fashion for disaster assistance and domestic ops (where there is little or no anti-air threat) will fill a capability gap until ERSTA equipped Griffons and true UAV capability become available.

23. "Proposals to arm the Griffon need to be treated with more care, since the basic platform is a light utility transport" Maj. Danny Houde, "The CH-146: An Armed Helicopter for the Canadian Army", *ADTB* Vol. 3 No. 4, Winter 2000/Spring 2001 pg. 37-41 http://armyapp.dnd.ca/ael/adtb/vol_3/No_4/vol3_no_4_E.pdf.

24. Controlled and operated by the CIA, not the US Army or Airforce. Personal observation forwarded by LCol. Scott McLeish.

25. Current generations of UAVs require a ground based "pilot", and often an "observer" to monitor the sensors. The other limiting factor is "tunnel vision" (sometimes referred to as "looking through a straw") caused by the sensor equipment's limited field of view. Even with these limitations, the CMR battalion will be more capable given UAV support. Next generation UAVs, like the "Global Hawk", have no dedicated pilot, and sensors with wide fields of view are an obvious upgrade for most UAV tasks.

26. Information forwarded by LCol Scott McLeish.

27. Personal observation by LCol Ian Hunt.

28. The ERSTA kit can be dismounted in 30 minutes, and Flights in Canadian Tactical Helicopter Squadrons can be mission configured for many different uses. I would suspect the brigade or battlegroup commander will have many higher priority tasks for the THS than ferrying CMR troops and supplies around the battlefield.

29. A US Assault Helicopter Troop (AHT) of the RAS consists of three platoons of five Blackhawk helicopters each. For this discussion, an additional helicopter for the Lift Coy HQ is included. Taken from FM 1-114, chapter 1. See also http://www.adtdl.army.mil/cgi-bin/atdl.dll/fm/1-114/toc.htm viewed Jul 2002.

30. Taken from FM 1-114, chapter 1. See also http://www.adtdl.army.mil/cgi-bin/atdl.dll/fm/1-114/toc.htm viewed Jul 2002.

31. Maj. Lee Hammond, "Tank: the Canadian Army's four letter word"; *ADTB*. Vol. 4 No. 4, Winter 2001-2002, pg. 78 http://armyapp.dnd.ca/ael/adtb/vol_4/No_4/vol4_no_4_E.pdf. This is not "small change". One example of the magnitude of resources spent this way, converting LFCA to the Windows/Office 2000 suite of software cost 3.6 million dollars for the hardware replacement alone, with further costs for the software licenses and the army of IT staff to maintain and run the system. Low cost, stable and powerful alternative operating systems and application software exist which could do the same jobs on pre-existing hardware, saving millions of dollars in this one program.

32. Bing West, "Rediscovering the Infantry in time of transformation"; *Defense Horizons*, March 2002.

Sergeant Arthur Majoor, CD

BOOK REVIEWS

Sean M. Maloney, "Canada and UN Peacekeeping—Cold War by Other Means, 1945-1970"

(St. Catharines: Vanwell Publishing Limited, 2002)

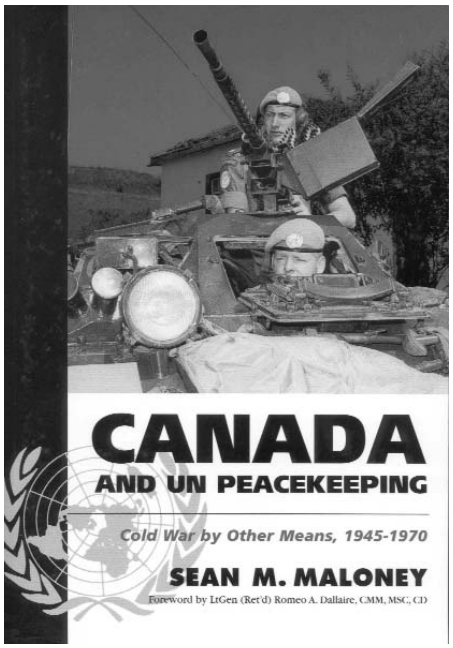
Reviewed by Mark Gaillard

Sean Maloney's latest book, *Canada and UN Peacekeeping—Cold War by Other Means, 1945-1970*, approaches the military history of UN peacekeeping, and Canada's record in "blue-helmet" operations from the angle of the strategic, diplomatic and military contexts of the Cold War confrontation between NATO and the Warsaw Pact led by the USSR. It also attempts to deconstruct the Canadian national peacekeeping myth. This myth, which Maloney sees as being detrimental, then and now, to Canada's national security interests, is apparently perpetuated by my own Department of Foreign Affairs and International Trade (DFAIT), which according to Maloney, "continuously boasts that [Canada] is the world's foremost peacekeeper." Maloney claims that "Canadian policy circles" (presumably including those inhabiting DFAIT) became infatuated with the "new" peacekeeping, human security and "soft power" in the post-Cold War 1990s, and have reinforced the myth and "obscured the true political origins and diplomatic purposes underlying Canadian participation in UN peacekeeping operations."

The question of whether the "true political origins and diplomatic purposes" have been obscured ignited a tempest in a teapot at DFAIT this past summer. Each morning as I pass through the main lobby of the Lester B. Pearson Building on the way to my office, I cast a quick glance at a small display case. Beneath a small bronze statuette of Lester B. Pearson sitting in a chair, one can view both the scroll and the actual medal of the Nobel Peace Prize that then Minister of External Affairs Pearson won in 1957. Like thousands of foreign service officers before me, I have walked past these artifacts of the history of the Department of External Affairs (since 1993 the Department of Foreign Affairs and International Trade) without questioning the prevailing myth that Pearson and Canada won the award for the invention of United Nations peacekeeping.

The publication of Sean Maloney's book, coupled with the reaction in the media this past summer has caused me to take a second look at that display. The 11 July 2002 edition of the *National Post* carried an article by Chris Wattie with the headline "General, not Pearson, Created Peacekeeping, New Book Says." This article stated that a "new book by a Canadian military historian says Lester B. Pearson did not invent peacekeeping during the 1956 Suez Crisis, the international standoff that he won the Nobel Peace Prize for helping defuse . . . Sean Maloney argues that Lieutenant-General E. L. M. Burns, a Canadian Army officer seconded to the UN, actually did the bulk of the work in creating the United Nations Emergency Force (UNEF) in 1956."

In the 16 August 2002 edition of the *Toronto Sun* in an article titled "Off Target," Peter Worthington stated that Maloney's *Cold War by Other Means* "has been interpreted by some as saying Pearson...was not the one mainly responsible for the 'invention' of peacekeeping" because "that distinction" goes to Burns. Worthington goes on to say that



"though I have not read the book, I doubt Dr. Maloney makes such a categorical claim."

I have made a point of reading the book to see what this so-called controversy actually is all about. In doing so, I have had the pleasure of reading a well-written military history of Canada's part in the golden age of UN peacekeeping. The subtitle, which plays on Clausewitz's famous maxim in his 1832 masterwork, *Vom Kriege*, that "war is merely the continuation of policy by other means,"[1] succinctly sets out the central theme: Canadian participation in UN peacekeeping in the 1950s and 1960s can only be understood in the context of Canada's NATO policy during the same period. The essence of Maloney's argument is that "Canadian peacekeeping operations were a means to project Canadian power for national security interests, interests which included economic, military and diplomatic components,

and that this power projection was in most cases directly related to, and even subordinated to, Canada's NATO policy." Fair enough. To me, this is the true controversy. The book should not be some revisionist attempt to strip the politician and diplomat Pearson of the credit of "inventing" peacekeeping and to confer it on a more-deserving but overlooked military officer.

The Pearson-versus-Burns issue arises only in the context of Maloney's description of the events of the Suez Crisis and the creation of the United Nations Emergency Force (UNEF) in November 1956. General Burns, a Canadian Army officer with a highly distinguished combat record in two World Wars, was appointed in 1954 as Chief of Staff of the UN Truce Supervision Organization (UNTSO), formed following the first Arab-Israeli war in 1948. In 1955, the British were increasingly concerned about the threat to the security of the Suez Canal Zone from the improving ties between the USSR and the Nasser regime in Egypt. Meeting with British Foreign Secretary Anthony Nutting in London on 4 November 1955, Burns discussed with Nutting "the possibility of introducing United Nations troops between the armed forces" of the countries involved in the Arab-Israeli conflict. urns's suggestion appears have had no impact on British military action in Egypt, as events were to quickly confirm. In Burns's words, the conclusion of this meeting was that "nothing more than the proposals of the [UN] Secretary General could be advanced at that time."

The 4 November 1955 meeting between Burns and Nutting meeting appears to be the sole basis for Maloney's claim that Burns is the source of the "concept of interpositional UN peace operations in the Middle East using military forces...as a solution to the troubles in the region." Contradicting this is Maloney's contention that the originator right from the beginning of the Suez Crisis of the idea of an "international force" to be inserted into Egypt was Pearson. The key paragraph here, whose source is Cabinet records, deserves to be quoted in full:

Early on November 1 [1956], Canadian Prime Minister Louis St. Laurent sent a message to Anthony Eden, the British Prime Minister. St. Laurent emphasized that the Anglo-French action was not justified and that there was the strongest possibility of war, regional or worldwide, if the action continued. This action, St. Laurent noted, would split the Commonwealth and—more importantly—NATO. The Soviets would also exploit this and destroy everything the West had accomplished since 1948. St. Laurent urged Eden to find some way of stopping the operation. There was no reply to his communication. St. Laurent then conferred with Canadian Secretary of State for External Affairs, Lester Pearson. Pearson suggested that some form of legitimate international force could be used to replace the Anglo-French force waiting offshore, thus allowing the British and the French to withdraw from their publically [sic] sated position that they were a "peace force". This was urgent, Pearson emphasized. The West could not afford wholesale condemnation of the UK and France by the UN General Assembly. This would also be exploited by the Soviets for the purposes of propping up their prestige and influence in the Third World.

The next day in New York, Pearson "approached UN Secretary General Dag Hammarskjöld with the suggestion of replacing the Anglo-French intervention force with an international one." Pearson "wanted to create a temporary force made up of Canadian and American troops, with a token number of French and British troops, to stabilize the situation...[and] this force would be followed by a more diverse international force." At the time, Hammarskjöld thought the idea impractical. Pearson's proposal was conveyed the same day to US Secretary of State John Foster Dulles by the Canadian Ambassador to the US, A. D. P. Heeney, in Washington. Dulles was also searching for ways to prevent the crisis from spreading. In his dialogue with Ambassador Heeney, Dulles agreed that an international force was a potential way forward but that he was unsure how such a "police force" could be constituted. It was Heeney, obviously with instructions from Pearson, who thought that UNTSO could be expanded in some way, with General Burns in command. Crucially, Dulles concurred with this idea. The direct result of this critical meeting occurred that same day. During the meeting of the UN General Assembly, the US delegation formally asked the Canadian delegation to "formulate and introduce a concrete proposal for an international intervention force." The UNEF was on its way to being born. It would be ultimately left to General Burns to implement the proposal and then command the force itself.

Clearly, the idea to create the UNEF came from the Pearson-Hammarskjöld and Heeney-/Dulles meetings of 2 November 1956. It was Pearson who first thought of an international force to defuse the Middle East crisis of November 1956, suggesting it to the Prime Minister and then pursuing this idea to its fruition. Nowhere is there mention that Burns had communicated his 4 November 1955 "suggestion" (if that is what it was) to Nutting, to Pearson or anyone else in the Canadian Government.

This makes it difficult to agree with Maloney's claim that "it is clear that the credit for the creation of UNEF was somewhat misplaced." Maloney implies that Pearson got the credit for Burns's idea. This is unfair and inaccurate. Maloney notes that "Burns implemented a vague idea emanating from New York and produced a workable force on the ground, even though his suggestion for such a force had been rebuffed a year earlier." Rebuffed by whom? Certainly it was not Pearson who rebuffed Burns's suggestion, which was made to the British Foreign Secretary. The idea emanating from New York, however vague, was Pearson's and his alone. Pearson was the decisive factor in the creation of the UNEF, not Burns. The credit has not been mis-placed. We need not, as Maloney contends, "seriously re-assess the relative importance of Lester B. Pearson in the development of Canadian UN peacekeeping." Without Pearson's imagination, persuasion and skillful diplomacy, there would have been no UNEF.

Putting aside this minor controversy, Sean Maloney has produced a timely work that challenges the prevailing wisdom that Canada is and has always been

an altruistic peace-keeping nation. Maloney correctly and forcefully argues that, based on the historical record, Canada's participation in UN peacekeeping was purely a function of its policy of maintaining NATO military and political capability to confront and otherwise contain the threat to world peace and security posed by the USSR. UN peacekeeping was one of the ways to fight and ultimately win the Cold War. But, with the demise of the USSR, UN peacekeeping has lost its original purpose. By the 1990s, however, the myth of peacekeeping had become so ingrained in the Canadian national psyche that the word "peacekeeper" had displaced that of "soldier." The consequences of this for Canada and the Canadian military are dire.

Mark Gaillard is a foreign service officer in the Department of Foreign Affairs and International Trade in Ottawa. He is currently deputy director of the Nuclear and Chemical Disarmament Implementation Agency. He graduated in 2000 with a Master's of Arts in War Studies from Royal Military College.

ENDNOTE

1. Carl von Clausewitz, On War, ed. and tran. by Michael Howard and Peter Paret, (Princeton: Princeton University Press, 1976), p. 99.

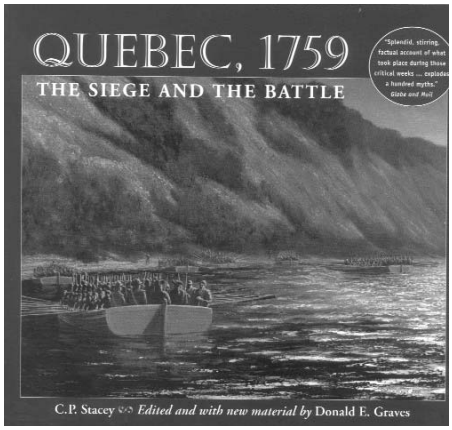
C. P. Stacey, "Quebec, 1759: The Siege and the Battle", edited. Donald E. Graves with new material

(Toronto: Robin Brass Studio, 2002), 270 pages, with 8 maps, more than 125 black and white illustrations, and 10 appendices. $27.95 (Cdn) or $21.95 (US).

Reviewed by J. A. Houlding, Ph. D.

"The war that resulted in the capitulation of Canada in 1760 … is the most important event in Canadian history," wrote Guy Frégault,[1] in a judgement hardly in need of qualification. Within that struggle the great set-piece was, of course, the siege of Quebec and the battle on the Plains of Abraham. Students of the 1759 campaign, of the Seven Years' War, and, indeed, of Canadian history generally are therefore fortunate that Donald E. Graves and the Robin Brass Studio have produced a new edition of C. P. Stacey's 1959 classic. Although it leaves the original text intact, this new edition introduces Stacey's classic anew and sets it within a revised and greatly expanded scholarly apparatus that adds significantly to the utility of the work.

Stacey's *Quebec, 1759: The Siege and the Battle* has remained, for more than forty years, the generally accepted standard account of the Quebec campaign, against which all subsequent accounts have been measured. The work quickly achieved and has retained this deserved status because, even within its brief 200 pages, its remarkable thoroughness and its usually sound judgement inspire confidence in the sureness of the author's touch. Being a good historian, Stacey familiarised himself with virtually all of the then-extant archival and printed primary sources, and he avoided the petty nationalism, the hero-worship, and the romance that had coloured so much of the work on the campaign from the beginning, just as they continue to do so. Graves—himself long a toiler in the much-lamented Directorate of History—reminds us furthermore that no historian could have been better qualified than Stacey to consider the strategic aspects of the campaign or could have had so extended an opportunity for first-hand observation of the problems of command, for he had



spent much of the recent war as chief of a team of historians attached to the Canadian Military Headquarters in London and had continued his career as official historian down to 1959.

Graves has added a number of worthwhile features to this new edition of Stacey's *Quebec, 1759*. The introduction includes a sketch of Stacey's career, a summary of the

book's genesis in the campaign's 1959 bicentennial, and an overall assessment of the work that sets it within the historiography. With Stacey's text itself, the editor's hand has had the lightest touch: Graves has confined himself to improving the obsolescent source references in the original, which are now "cleaned up and rendered consistent with modern practice" (p. 12). Where Stacey had included only a brief and inadequate list of his principal sources, Graves has been painstaking enough to add an excellent, 12-page bibliography, which will be of the utmost advantage to students and researchers, grouping the sources cited by Stacey in six pages and an update of the work that has appeared subsequently in a further six pages. The original edition's excellent maps have been retained, while two new maps have been added–one of these new maps, which sets out graphically the several plans of attack considered (and some attempted) between May and September from the Cap Rouge to the Montmorency Rivers, is an inspired addition and adds greatly to the clarity of the work. To Stacey's original pair of appendices, which reproduced Wolfe's crucial late-August correspondence with his three brigadiers and his 2 September dispatch to Pitt, Graves has added eight more appendices and, in so doing, has added significantly to the usefulness of the new edition. Included among these are orders of battle of the opposing land forces and a detailed breakdown listing the size, armament, complements, and commanders of the 49 ships and vessels in Saunders's naval squadron, as well as the 117 hired victuallers and transports that carried and assisted the expedition.

Unaccountably, save for one trifling addition, Stacey did not take advantage of subsequent imprints to amend his text, even though he himself had published, with commentary, extracts of documents found only after 1959 that would have enabled him to modify passages and even to answer questions which he himself had posed in the original text. Graves has included Stacey's discussions (which originally appeared elsewhere) of these new documents as appendices, and he has added footnotes to the main text directing readers to these appendices whenever they add to our understanding or modify Stacey's account.

A further, lengthy appendix is, in itself, an admirable and succinct essay on mid-18th century combined operations, specifically on the Royal Navy's services in the St. Lawrence in ferrying the expedition, supplying it, and conferring upon it the decisive advantage of mobility. For the editor has not failed to point out Stacey's weaknesses, not least his tendency to support the soldiers' criticism of the navy. Though Stacey, admittedly, praised the navy's overall contribution, for him it was the army—the "efficient, smooth-functioning, hard-hitting army"—that was "the real hero of the Quebec campaign" (p. 26); and it is Graves' principal critique—one that does no disservice to the redcoats—that Stacey failed fully to appreciate the dependency of the army on the seamen throughout.

The accuracy of this critique is most apparent in Stacey's too brief account of the down-river descent on the night of 12/13 September, in which the great difficulties that the navy's professionalism overcame aren't sufficiently dealt with. That Stacey paid too little attention to the detail of amphibious operations (and, indeed, to the extraordinary drama of the descent, it must be said), will be apparent to readers who consult Grinnell-Milne's reconstruction of what he calls "the river plan."[2] In short, the boat-work that carried Wolfe's first wave nearly nine statute miles down the mighty river, on a powerful ebb tide, between swirling eddies, in darkness, close to an enemy shore, and to a narrow landing-place difficult to hit upon exactly and at the foot of cliffs had to be precise and silent. It should be added that the sailors' understanding and what must have been their calculations of distance, of tide, speed, and moonlight have, since this edition appeared, been calculated to a nicety in a fascinating new, technical article,[3] in which Grinnell-Milne's (and everyone else's) reconstructions are modified.

Graves writes in his introduction that it is his hope that his work "has not damaged what is a minor classic," as he has sought "simply [to] decant fine old wine into a new and attractive bottle" (p. 12). He has succeeded in this, admirably, as one would expect of an historian of the editor's reputation. But if one may be forgiven for concluding with a complaint, it is that this edition, though so carefully decanted, has not (yet) been bottled as it deserves in the large, indeed, coffee-table format for which the more than 125 illustrations, the detailed maps, and the fine, panoramic photography of the theatre—the very accomplished work of Dianne Graves—cry out. One hopes that Robin Brass Studio will consider such an approach in subsequent printings, of which there will surely be several for so notable an addition to Canadian military history.

J.A. Houlding, Ph.D is the author of "Fit For Service: The Training of the British Army, 1715-1795"and "French Arms Drill of the 18th Century." He lives in Germany.

ENDNOTES

1. Guy Frégault, *Canada: The War of the Conquest*, trans. Margaret Cameron (Toronto, 1969), ix.

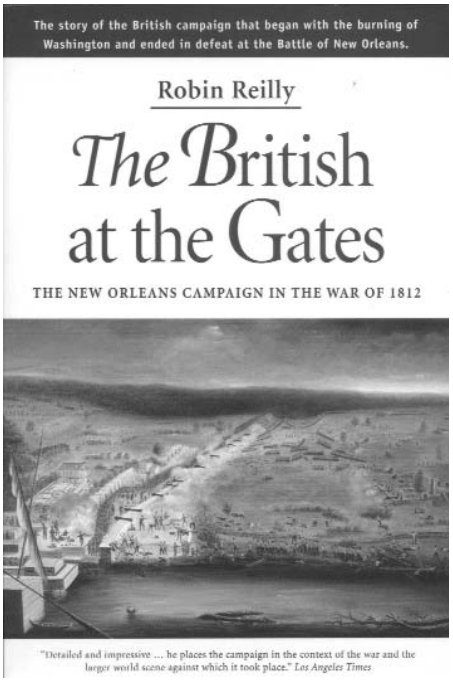
2. Duncan Grinnell-Milne, *Mad, is He? The Character and Achievement of James Wolfe* (London, 1963), 77-93, 207-24.

3. Donald W. Olson, et al, 'Perfect Tide, Ideal Moon: An Unappreciated Aspect of Wolfe's Generalship at Québec, 1759', Willian & Mary Quarterly, 3rd Ser., 59 (Oct 2002), 957-74.

Robin Reilly, "The British at the Gates: The New Orleans Campaign in the War of 1812"

(Toronto: Robin Brass Studio 2002), 399 pages, illustrated with nine maps. $18.95 (US), $25.95 (Cdn).

Reviewed by Major John R. Grodzinski, CD



The British are often accused of ignoring the War of 1812, so it is surprising to find that a British historian would not only choose to write about a "sideshow" war, but deal with a campaign that "lacks neither the ingredients of victory or even triumphant defeat." Fortunately, Robin Reilly's study is a detailed, even-handed, and masterfully written account of the Battle of New Orleans that does not get lost in fables or half-truths, a tradition that unfortunately continues in more modern so called scholarly work. This book first appeared in 1974, and the publication of a new edition is most welcome. The author's purpose is twofold: to place the campaign within the perspective of the War of 1812 and to provide an account "securely cast from evidence, making no concession to romance."

More than half the book places the New Orleans expedition in the overall context of the War of 1812, American territorial expansion, the war against Napoleon, European diplomacy, and the peace negotiations. The New Orleans campaign was linked to these events and the peace negotiations at Ghent. The American war was unpopular at home and, if prolonged, could have affected relations with Britain's European allies, particularly with Russia and with the restored monarchy in France. The British hoped that the acquisition of negotiable territory would force the conclusion of hostilities. With gloomy dispatches from Paris, the failures at Plattsburgh and at Baltimore, this became more important and shifted attention to New Orleans.

British interest in New Orleans began while it was under French ownership, and the outbreak of war with the United States resurrected plans to attack it. An assault to reduce pressure on the Canadian frontier was proposed during November 1812, but it never occurred. Planning assumed that a substantial portion of the local population would rise up against the United States, thus easing its capture and reducing the number of troops required. Captain Hugh Pigot, RN, considered these assumptions "a piece of folly." The successful attack on Washington led to the dispatch of additional orders (with promises of more troops) in August and September 1814 to Admiral Sir Alexander Cochrane and Major-General Robert Ross to obtain command of the mouth of the Mississippi with a view to "occupy some important and valuable possession…which we might be entitled to exact the cession of." While the ultimate fate of New Orleans would rest with the peace negotiations, possession of the city would obviously enhance the British bargaining position. The negotiating position of *uti possidetis*, the retention of territory held at the end of hostilities, was offensive to the American negotiators who interpreted it to mean the retention of conquered territory. The British refused to budge on this issue until November 1814, when the principle of *status quo ante bellum* replaced *uti possidetis*, guaranteeing the return of captured territory. The urgent British desire for peace made the change acceptable, while other outstanding issues were not important enough to prolong the war. This was also an admission, says the author, "that Britain lacked the essential power to compel the Americans to submit." Signing of the treaty occurred on Christmas Eve 1814, shortly before Major-General Sir Edward Pakenham arrived to take command of the army before New Orleans.

The author also debunks the long held notion that booty was the main purpose for the campaign. He blames Latour and Alexander Walker for setting this wrongful course and the failure of subsequent historians, including Fortescue, to properly examine the subject. The government's objectives of the campaign were territorial and diplomatic. Pakenham also received specific instructions regarding booty and was to ensure, as far as possible, that looting and theft be kept to the minimum. There were also rules for the distribution of legitimate prizes. The rules at the time distributed the spoils in shares by rank to those present in the navy and army. The Treasury received none of it. The cost of the campaign was borne by the British government. Certainly, Cochrane's conduct was less than exemplary, but the suggestion that greed initiated the campaign is unfounded.

The campaign presented both sides with considerable challenges. Major-General Andrew Jackson had to cover many avenues of approach, and his main army was not concentrated until 20 December

1814. His failure to ensure the posting of pickets on one approach allowed the enemy to move to within eight miles of New Orleans before being observed. This is even more surprising as British intentions were by then generally well known. Major-General John Keane, temporarily in command until the arrival of Pakenham, engaged the Americans and then rightly chose to not continue onto New Orleans. With the death of Major-General Robert (some historians have identified him as "Alexander") Ross at Baltimore, Major-General Sir Edward Pakenham was assigned command late in the expedition and only arrived on Christmas Day. His options were limited. Pakenham lacked sufficient strength to attack Jackson's defences and could either attempt an immediate assault or await reinforcement. He chose to wait, which allowed the Americans to improve their position and the weather to wear away British morale, ultimately forcing an artillery battle, which Pakenham could not win. Despite the Herculean efforts of Cochrane's sailors in moving guns (including 18 pounders) and ammunition 90 miles from the fleet —over territory the Americans thought was impassable—Pakenham was still hopelessly outgunned. Digging the guns in proved impossible, and limited cover was constructed using materials at hand. Rounds were short, with only a single day's supply available for the heavy guns. The British army occupied a precarious camp, along a river controlled by the Americans, at the end of a line of communication 90 miles long.

Pakenham's plan was complex and his failure to oversee the artillery preparations or the movement of Thornton's brigade on the evening of January 7 damning. The British position was a complex one that required "a commander of exceptional ability." It was the failure of the British, claims the author, to produce commanders with the "steely ruthlessness essential to victory." Wellington had many good generals in the Peninsula but really none with the imagination, flexibility, and dedication required for independent command—a factor that was as important to the Americans as it was to the British.

The description of the final battle is riveting. The British managed to break into one part of Jackson's defences. Another assault faltered as the regiment carrying the fascines and ladders was nowhere to be found. In the end, two British brigades were virtually destroyed, an outcome that proved shocking to both sides, as it was unexpected. British senior leadership suffered grievously: three out of four generals fell, along with eight colonels. Meanwhile, casualties among junior officers and sergeants were crippling: one regiment lost 24 officers and 12 sergeants. Reilly muses that if the American guns captured on the west bank of the river had been turned on Jackson's line, he may have been forced to withdraw. It is uncertain whether the over-extended British forces, with their long line of communication and only two regiments capable of fighting, could have achieved victory. The author blames the staff for not waking Pakenham the evening before the battle and reporting that Thornton's brigade would not be across the Mississippi before daylight, a critical element of the British commander's plan. The author also takes care to point out that it was artillery and not the "American rifle" that won the battle. All accounts indicate that one group of experienced riflemen and three-quarters of the U.S. 44th Infantry did not fire at all, while most of the assaulting British units were within musket range for only a few minutes, a period far too short to achieve the devastation that occurred.

Reilly is critical of both American and British leadership. He notes that Ross was at odds with Cochrane's marauding raids—in that they would not achieve any military goal, they would strengthen American resistance, and perhaps spiral to further reprisals—but he supported burning of public buildings in Washington. Jackson was a good field commander, who prevailed despite limited resources and a complex political situation. Unwilling to play politics, he became victim to high-handed acts by militia buffoons and state politicians. Jackson proved bigger than these petty acts and rose to even greater heights.

The bibliography reveals excellent use of American, British and Canadian archival material and an excellent cross section of secondary sources. Reilly makes careful use of the memoirs of the campaign, noting that the uncritical use of accounts by Latour, Walker, and Gleig have created a mythology of the campaign "which is in the true sense romantic." He considers the journal of Lieutenant-Colonel Alexander Dickson, the British artillery commander, as the best journal of the campaign primarily because his notes, which were not intended for publication, boast few judgements and even fewer criticisms. Conversely, Ansène Lacarrière Latour's memoir is strongly prejudiced, diminishing its historical value.

With its detailed overview of the background and conduct of the New Orleans campaign, *The British at the Gates* is an important book. Reilly is neither forgiving, dismissive, nor biased. His careful examination and use of sources has resulted in an excellent account of a gravely misunderstood campaign. With several new maps and illustrations, this book is the best British account of the background to the war and the New Orleans campaign. It should be read by any student of campaign planning or the War of 1812.

Major John R. Grodzinski is the G3 of the Land Force Doctrine and Training System and is a student of the War of 1812.

The Stand-Up Table

Commentary, Opinion and Rebuttal

Commentary Manoeuvre Warfare Doctrine for Urban Operations by Major A.R. Jayne, The Army Doctrine and Training Bulletin Volume 5, No. 1, Spring 2002

Major Chris Young, of the Army Lessons Learned Centre writes…

American Lieutenant-Colonel Ralph Peters, in an article *The Human Terrain of Urban Operations* (*Parameters*, Spring 2000) identified the human dimension of cities as the centre of gravity in any urban operation. He somewhat simplistically (but usefully) characterizes cities into one of three types: hierarchical, multicultural or tribal. Taking those characterizations as a start point, it becomes apparent that all three present different challenges, particularly concerning culture and governance. If that human dimension is accepted as critical to the centre of gravity of any operation in an urban battlespace, then the importance of human intelligence (HUMINT) to a successful resolution of any urban battle becomes more critical than technology. The ability to determine the enemy's intent may, in fact, become secondary to determining the intent and political allegiances of the civilians within that urban battlespace, which in turn influences the direction any urban battle will take (hence the importance of the thoughts behind General Krulak's 'Three Block War').

It is dangerous to speak about 'traditional' approaches to fighting in an urban environment. The usual 'Western' approach of the 'advance-seize foothold-break-in' was denied in the initial campaign in Grozny, when the Chechen rebels adopted a fluid defence based not on terrain, but rather upon concentric rings of defence which were mobile and flexible. During the Vietnam war, the North Vietnamese, during their 1975 spring offensive, used the so-called "Blooming Lotus" strategy. The strategy involved the infiltration of a city's defences, avoiding perimeter defences (typically the strongest area of a city's defence) and driving fast moving units into the city centre to capture or destroy key nodes. Once the nodes are destroyed, the lotus blooms outward and the now disorganized perimeter units are destroyed piecemeal. Two elements are key to its success: intelligence (HUMINT figures strongly) and the ability to prevent reinforcement of the city through the use of cordons, something the North Vietnamese were not able to effect. This so-called 'inside-out' strategy is just one manoeuvrist solution to the question of urban warfare. The Russians in Grozny during the January 2000 assault employed this to some extent, infiltrating hundreds of snipers into the city to not only kill key leaders, but also to gain intelligence on enemy locations and movements.

One interesting article, and another point of view that is advanced on the subject of urban warfare and the way aheadis in a report from an MIT (Massachusetts Institute of Technology) Security Studies conference held in 1998. The idea was advanced that urban operations should be divided into three types: policing operations, raids, and sustained operations. Sustained operations were to be avoided, the conference attendees instead advocated the idea of establishing a loose cordon and cutting off utilities to encourage the city inhabitants to rise up and rebel against the enemy, still known as siege warfare. The difference is that Non-governmental organisations (NGOs) such as the Red Cross become critical to ensuring conditions do not break down completely within the city into anarchy. Also, the conduct of siege warfare would need to become sensitive to the rules of engagement and the ever present media.

The main argument made at the conference was that while it was easy to establish scenarios under which the quick capture of a city was welcomed, it was difficult to argue a scenario under which it was desirable to do so considering the costs and collateral damage. What is interesting is that when we examine urban warfare, we do so almost exclusively as a military option. No real consideration is given to breaking down that urban battle into its component parts, with the military doing its part, the police/para-military forces doing theirs, and NGOs et al doing theirs, coming around in a circuitous fashion once again to the wisdom of General Krulak's 'Three Block War"philosophy, which really is, in the end, a new manoeverist doctrine for urban operations.

Postmodernism and Subjectivity as Virtues…

More on "Starship Troopers–A Polemic," The Army Doctrine and Training Bulletin, Volume 5, No. 2 (Summer 2002), p. 81, and "In Defence of the Well Read Soldier (and Starship Troopers)," The Army Doctrine and Training Bulletin, Volume 5, No. 3 (Fall 2002), p. 91-92.

Major Ray Farrell of the Second Regiment, Royal Canadian Horse Artillery writes…

I was interested to read Captain Godefroy's reply to my comments on the Army Reading List (ARL). Sadly, and clearly because of my own inadequacy as a writer, Capt Godefroy appears to have completely missed the point of my argument (whilst incidentally attacking me personally). I beg to reply in turn.

My first failure to explain myself turns on Captain Godefroy's quite fair description of the ARL as a bibliography compiled by fellow officers. So it is. My own suggestion that bibliographies and the recommendations of friends ought to be a good guide to reading material should have included two additional comments, which I incorrectly assumed to be obvious. I advise my fellow officers to use the bibliographies of books or articles *which they have themselves found interesting* to further their reading in that subject. Likewise, in choosing new authors to try out, I often follow the advice of friends *whose opinions have proven to be good guides in the past*. In matters as subjective as the quality of a book (or film or piece of music), I'm not interested in the opinion of somebody I don't know at least by reputation. I need to know that a particular reviewer (or author, in the case of a bibliography) has tastes that agree or disagree with mine, so that I can situate his or her critique in some kind of frame of reference. And, yes, bias does have its merits. Were the ARL at least the work of a single person or a small group with known expertise and tastes, I could use it. The ARL does not qualify since it has been compiled by persons whose preferences are unknown to me. In the case of *Anabasis*, it works. In the case of *Starship Troopers*, it does not. A coin toss is as good a guide.

As regards the value of literary or any other criticism, I recognize it. I just don't agree that the ARL serves as useful criticism for the reasons above. Captain Godefroy's analogy to the assessment of cars is silly. Compared to the number of books available in all the fields considered by the ARL, cars are trivially simple. It would actually be possible to drive every model in the world. Anyway, cars have many characteristics which can be objectively measured. A better analogy would be to the question of who is the best cook in, say, Canada. Only a complete idiot would try to answer such a question. Of the millions of cooks in Canada, all I can do is name a handful of my favourites, for what that's worth. For every one of them, there are probably a thousand better ones whose excellence is outside my experience. Anyway, I like curry and you like steak.

Captain Godefroy retorts that the ARL is merely a starting point, which, to carry on with the cook analogy, is like producing a list of fifty merely competent Canadian cooks. It's easy and pointless. Any well-read professional officer does not need a starting point, and a young officer just starting out will probably do better with books that she has chosen for herself. With a strange absence of guilt, I confess I fall into Captain Godefroy's despised category of people-who-can-select-their-own-books. Why this group gets lumped in with people who don't read at all is beyond me, but we do. Perhaps Captain Godefroy can explain.

Finally, I must reply to the implied slight to my own character and professionalism. From the title of Capt Godefroy's article, never mind the text, the suggestion is made that because I oppose the reading list, I oppose reading. I don't. In fact, I even read a bit myself, now and then. Far from representing "intellectual illiteracy" or a culture "that shirks away from reading," I am considered to be rather well read by those who know me. I am also professional enough to be able to disagree with my fellows without insulting them personally. Captain Godefroy would no doubt be surprised to learn that I share his enthusiasm for professional development and appalled to discover that I am the unit coordinator for my Regiment. Incredibly, perhaps, I have actually read a fair few of the titles on the ARL including (yes, the book) *Starship Troopers*. (Tellingly, I found almost half of those I have read to be poor.) I cannot claim to have read a majority or even a large minority of the entire ARL, but then I am willing to bet that none of the compilers have read many of the books on my shelves either. In my initial commentary I did not suggest alternate titles to those in the ARL, not because I can't, but because to do so would be to make the same mistake as its compilers. That, by the way, would be a better example of hypocrisy, a term which Capt Godefroy would do well to use carefully in reference to people he does not even know, and a charge that I utterly reject. I say what I think, and I stand by it. The term for this is sincerity, which is usually considered the antithesis of hypocrisy.

I would be happy to trade titles of favourite books or debate Robert Heinlein's campiness with Captain Godefroy or anyone else off line. I'm on the DIN.

Readers of The Army Doctrine and Training Bulletin are encouraged to offer their comments on this subject. Before doing so, potential writers are encouraged to review the Army Reading List (available on-line at the Army Electronic Library at www.army.dnd.ca/ael/) and to read the introductory comments. As a simple guide to reading, the Army Reading List was never intended to supplant other lists or books.

Comments for the Open Forum on "Leadership Training in Basic Army Officer Training" by Officer Cadet Reashore, Army Doctrine Training Bulletin, Vol. 5, No. 2 (Spring 2002).

Major Bill Beaudoin of 3 Area Support Group writes…

I enjoyed reading the noted article because it forced me to re-examine a number of beliefs that I have held for many years regarding basic officer training. The author has eloquently constructed an argument that more than adequately supports her central theme that the Common Army Phase (CAP) is "...simply teaching management skills..." and "…the focus of the course is thus on training; education is left for another time." There is no issue with the construction or presentation of her arguments. There is, however, some concern on my part that the fundamental aim for basic officer training has been missed by the author and that the importance of "leadership education" has been elevated beyond its immediate need or requirement. As the author indicates on several occasions, you can pick and choose your sources for management and leadership definition.

The way I read it, the author was left wanting from her experience on CAP because it did not provide that educational stimuli that was felt necessary to enhance her leadership education. Apparently, the course was too cluttered with learning those managerial techniques focusing on "...navigation, section attacks and reconnaissance patrols." More importantly, the author would seem to believe that institutionally, there are better methods for providing her required leadership education than those currently practised on CAP. There seems to be a need for a more direct, user-friendly approach to providing those specific and dedicated requirements that the author searches for. I am not as confident as she is in discussing the "single or double loop" feedback methods, although, I suspect that with time, I could become comfortable with their philosophical applications. I am, however, more at ease with discussing her recommendations for improving the course by "...increasing the focus on candidate self-awareness...and providing instructors with training in coaching and mentoring."

The fundamental individual leadership developmental tool in the Army at the tactical level has always been the section. Why is this so? It is undoubtedly the hardest *leadership* function in the Army. Why is it that basic, entry-level leadership training (junior NCOs and officers) uses the section and section tactics as its building block? Simply put,a junior NCO/officer commanding a section isdirectly responsible for getting ten individuals (including him/herself) to work as a cohesive unit in order to execute physically and mentally demanding, often deadly tasks in all conditions of weather, any type of terrain, and despite fatigue. It is extremely difficult to provide formal and philosophical "education" on coalface leadership requirements at this level. The author seems to have no major problem with the developmental tool, just how it is applied to her leadership education.

The author develops an argument that is reflective of current society. What are my personal needs, and how are they satisfied? Where is my individual attention? Is not the institution solely responsible to clearly identify to me my developmental needs? Nowhere in her article does the author identify or accept her responsibilities for her education. More importantly, she fails to realize that, right before her eyes, all her leadership needs are being met *for the level required on CAP*. As the author awaits her "self-awareness assessment–single or double loop serving," perhaps some time should be spent contemplating what has gone on around her. While I appreciate that the average candidate may not have had the full benefit of experience with directive and participative leadership styles, possessed an understanding of the "hierarchy of needs" or had a background in motivational techniques (a number of which are out of fashion these days), the grapes are there for the picking. Which candidate seems to have no problem motivating individuals? Why are some patrols successful and others a failure? Why is it that when "person X" speaks, people listen? Who is physically strong but mentally weak? Who are the bullies? Who goes out of their way to help others, even when they are tired? Did I support my peers as I expect them to support me? Who leads well in the sun but falls apart in the cold? Who maintains their section and their personal kit to the same standard? Who exemplifies mission, soldier, myself? I believe this tenet is timeless. Accepting that reflection is always good. The bottom line is that we haven't been doing this for decades without reason. Or have we?

Having established that perhaps the author has missed the forest for the trees with regards to CAP and its archaic methods, let's be bold and take it a step further. Why do we use the approach we do with regards to entry-level leadership? At one point, basic officer training or MOC qualification was used to provide a mental, physical, and psychological "gut-check" to determine if it was worth the Crown's effort to invest further time, money, and effort in a candidate's training/development. The word education never came into the picture, nor was the assumption present that everyone was a leader. This approach was not abused or misused as much as many today would like to think. Yet, the underlying concept remains as valid today as it was then. It just wasn't analyzed as much. If you could not command yourself and a section, how could you expect to be a platoon commander, company commander, in short, a leader? I also seem to recall that the warrant officers and senior NCOs that were responsible for this early military education (or was it training?) did not have substantial backgrounds in coaching and mentoring. They just seemed to do it, warts and all. Also, the "staff" made no assumptions about the "the student's previous military education"; it just wasn't relevant to the task at hand.

In my response, I must acknowledge that the military does, in fact, continue to examine its training approaches. I suspect that all the recent emphasis on the

conduct of after action reviews is but one example. Within the contents of this response, I will not address the issue of compressed training times and the struggle to train an ever-increasing number of candidates to higher standards with ever-decreasing resources. I will leave this issue for others to chew on. I suspect that it could be the subject of an article/analysis in itself. I do believe, however, that the current generation of well educated warrant officers and senior NCOs are more than capable of understanding and applying any leadership method necessary. Given the restrictions indicated and, more importantly, returning to the raison d'être of the CAP, I do not believe the need is there.

There comes a time when "the rubber meets the road." At some point, you just "gotta" do it. No amount of analysis, peer-assessment, self-awareness feedback, or "group hugs" is going to be a substitute for the dirty reality of our business. The author rightly identifies that there is not a hell of lot of time allocated for studying Jomini, Sun Tsu, Guderien et al. during CAP. I would suggest there is probably a reason for this. The author's leadership education, already advanced with her work in military psychology, can only be enhanced by reading *All Quiet on the Western Front* by Remarque, *The Regiment* by Mowat, *The Battle for the Falklands* by Max Hastings and Simon Jenkins, *The Profession of Arms* by Hackett, and on and on. Here is your initial military leadership education. Read; read and don't stop reading. But don't forget to look around you or a good part of your "education" may pass you by. Just don't blame CAP.

Commentary on "War as Science: Jomini and American Doctrine," by Lieutenant-Colonel Stephen Saulnier, The Army Doctrine and Training Bulletin, Volume 5, No. 3, Fall 2002.

Major Ray Farrell of the Second Regiment, Royal Canadian Horse Artillery Writes…

Congratulations to Lieutenant-Colonel Saulnier for his to-the-point comments on War as Science. His analysis of the American military decision-making process (MDMP) as the logical extension of a doctrine based on quantifiable factors is a good one. I sometimes worry that our own thinking has moved too far in the same direction, at least in practice if not in doctrine. Lieutenant-Colonel Saulnier incidentally mentions what I consider to be one of the most glaring and easily corrected faults in our tactical training right now—the complete absence of morale or other psychological factors in our principle tactical simulator, Janus.

In Janus, just as the author describes in his commentary, bloody exchanges are common. This should not really be surprising since both sides are well armed and the factors which tend to degrade weapon effectiveness in reality are not there in simulation. With Janus, nobody knows you are afraid.

Using Janus, but not in war, every man fights to the death. Attackers never go to ground or hesitate to break cover. Defenders never surrender or retreat. There is no reason that these very real aspects of battle should not be modelled in simulation just because they are intangible. Lots of war games model morale. A few algorithms are all that is required. Other intangibles, such as confusion, fatigue, distraction, etc. can also have important effects on tactical engagements. These too can be simply or even extensively modeled. A method quite common to even simple war games is to assign morale, fatigue, and state-of-training values to a unit or force. Units taking a beating may break with some probability based upon their morale and possibly other factors such as being out of contact with their headquarters or having enemy behind them. Units anywhere may fail to correctly carry out orders with some probability based upon difficulty of their task, fatigue, and training. Simple or complex models can be devised.

As it stands now, our simulator does not really reward a commander whose plan emphasises deception, surprise, maintenance of his own morale, or attack on the enemy's morale. If we are going to insist that our doctrine is based on intangibles such as attacking the enemy's will to fight, then we ought to model that will in our training.

Commentary on "No Time to Think: Academe and the Officer," The Army Doctrine and Training Bulletin, Volume 5, No. 3, Fall 2002.

Major Tom Bradley of Lord Strathcona's Horse (Royal Canadians) writes…

I am writing this letter in response to the critique made of senior officers, and the whole officer corps by extension, in respect to the paucity of articles produced by its members. I admit that the comments made in the Fall 2002 have finally "gotten my goat" and forced me to respond.

It has become fashionable of late in CF periodicals to comment upon the lack of serious discussion papers and essays produced by the officer corps. While I understand that for editorial staff producing high quality publications, the lack of appropriate material is perhaps frustrating, I would argue that a grave injustice is being committed in alleging academic laziness on the part of the

audience. Any officer who has visited a Mess on a Friday night knows that there is no lack of ideas, visions, and proposals at all rank levels. Further, any review of the professional training during Development Periods 1, 2, 3 and 4 (Officer Professional Military Education [OPME], Army Operations Course [AOC], Transition Command and Staff Course [TCSC], Canadian Forces Command and Staff Course [CFCSC], and Advanced Military Studies Course [AMSC] to name but a few) shows that professional study, discourse, and presentation is alive and well throughout the officer corps. So why is it that there are no articles being prepared on strategic level issues? Perhaps it is because, as a respected infantry major so eloquently described it in his comments of the Fall 02 edition of the *Bulletin*, we at all levels in the Canadian Army are becoming overwhelmed with work, much of which provides little other benefit than to tax the staffs involved. As I review my own career on regimental duty or my postings as an instructor and member of the joint staff, I have yet to see soldiers and officers at all rank levels not gainfully employed. Rumour has it they exist, but for the majority of us, daily soldiering, secondary duties, and meeting the requirements for professional development mean that we are busy. Now add to these obligations the requirement to support my subordinates' professional development (AOC)—a large portion of which has been downloaded to my unit-and I probably have the reason why my peers and I do not have the time to produce the scope and volume of discussion papers we probably should. But then the cynic would say, why bother, since recent history has shown that many decision are being made on the basis of short-term fiscal expediency rather than retaining the necessary operational focus?

In the end, I believe we are doing the audience a great disservice in alleging that we have not spent the necessary time on academic discourse of our profession. The media we choose to expound these views in are widely read by non-military members, who thereby form a wrong impression of the qualities of the CF's leaders. We are, in fact, using the time that is available after meeting the demands of the Army of Today and Tomorrow. If we are to produce more quality discussion papers, then ease the burden on the field force. You cannot have it both ways.

Commentary on "The Future of Parachute Operations," The Army Doctrine and Training Bulletin, Vol. 5 No. 3, Fall 2002.

Major (Retd) Roy Thomas writes…

IF THERE IS A FUTURE FOR PARACHUTE OPS, CONSIDER THE RESERVES!

In his article, Captain David Beatty puts forward a convincing case that the Army should consider parachute operations for the future Land Force. I am told that Malaya used parachutists on jungle ops against insurgents not so long ago. There are few landing zones for helicopters. Rappelling took too much noisy hover time, thus exposing the troops to detection and ground fire. If the Canadian Forces were to increase the Army's parachute capabilities, I suggest that the Reserves be assigned a significant part in that process.

Indeed, maintaining a parachute capability is a role that some Reserve infantry units have already assumed without formal assignment. One need look no further than to the Montreal Street armouries of Kingston's Reserve infantry unit, The Princess of Wales' Own Regiment (PWOR), to discover that more of the soldiers assigned to that unit's mechanized infantry role are currently qualified parachutists than are qualified to drive any APC let alone a LAVIII! The close proximity of Trenton as well as the attraction of parachuting to the age group recruited by PWOR no doubt accounts for this. Similar situations of an already existing capability likely could be found in other Reserve units close to the parachute training facilities.

Simple addition when considering training times suggests that the parachute role is much more suitable for the Reserve infantry unit than that of mechanized infantry. I'm told that Regular Force soldiers can expect to spend up to six months becoming fully qualified on the LAV. This is in contrast to the three weeks that it took to qualify me for parachuting. Continuation training on use of the LAV cannon alone will be measured in weeks. My Centurion gun camps were measured in weeks each year but keeping current for parachuting took a jump every three months. This is before tactical training has even been considered. It is taken for granted that basic infantry skills are a prerequisite whether mechanized or parachute! Thus training-time considerations would seem to favour giving those units already with an unofficial capability a parachute role to replace their present mechanized role if parachute operations are in the Army's future.

There is the added bonus that if British experience with their Territorial Parachute and Special Air Service units is any indication, the assignment of a parachute role to selected Canadian reserve units will attract recruits and improve retention.

If our army subscribes to Captain Beatty's arguments regarding the future of parachute ops, considering should be given to increasing the CF parachute capabilities by assigning this role to Reserve units close to Trenton.

Tactical Problem

Building Combat Power Through Grouping

Too often, these old eyes have seen inexperienced commanders misunderstand the concept of how to build combat power. The ability of a combined arms tactical team to destroy its opponent is based on a combination of factors: tactical ability, array of weapons, luck, ground etc. Some of these, the commander can influence. Others are beyond his control. One which all commanders can and must control is their tactical grouping.

There are manifold simple errors that are regularly made, which unnecessarily diminish the combat power of any given force. A good example is the allocation of artillery resources to units that are in reserve. Another is the incorrect command relationship among members of the team. Another is the unnecessary splitting of assets.

Below you will have a simple problem. Array the forces both on the ground and in a grouping and tasking matrix, being specific about the command relationships. You are welcome to submit your solutions to the Bulletin, and if Tacitus gets any creative ones, they may be shared in a later issue.

Points to remember:

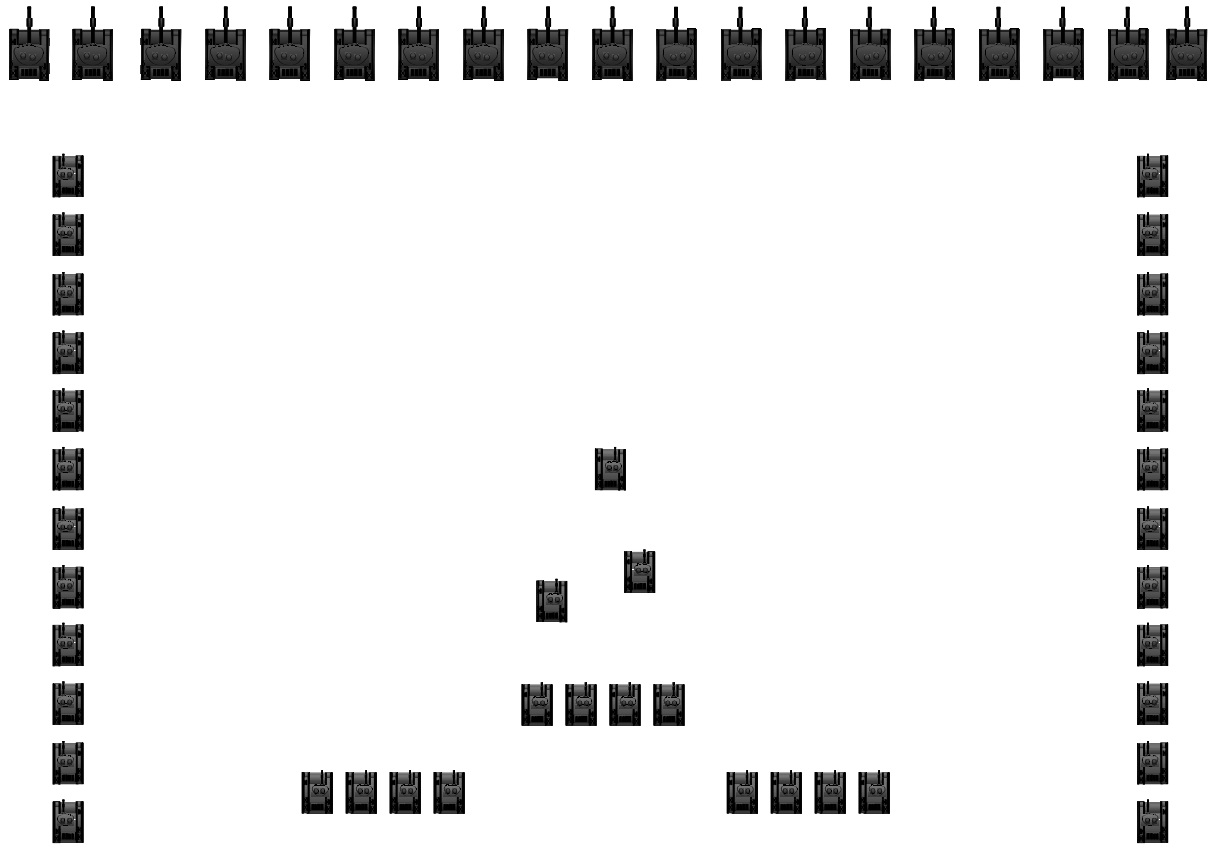
a. do not destroy command relationships - build them;

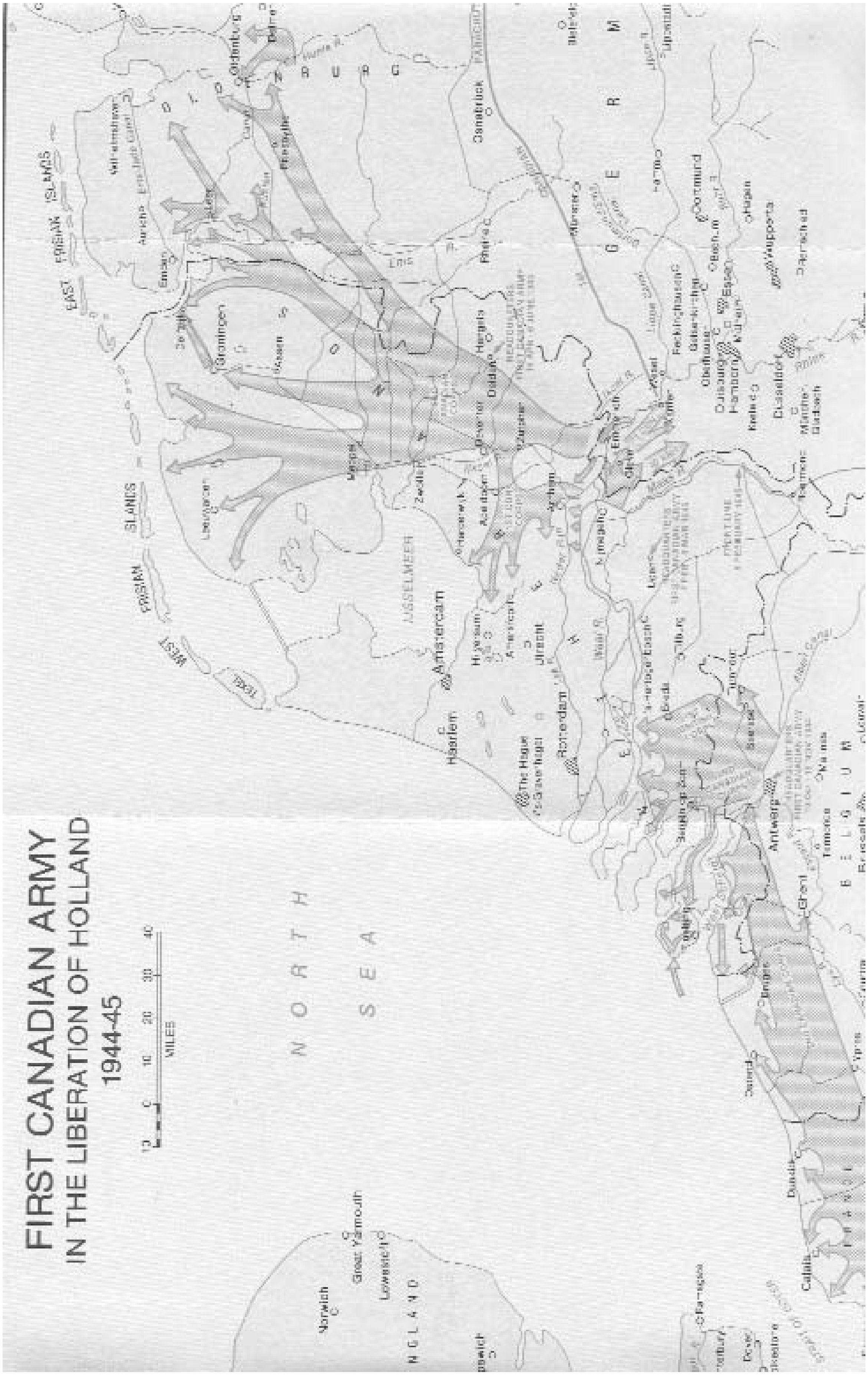
b. balance is usually a desirable end, but not at the cost of combat power;

c. flexibility and mobility are not mutually exclusive; and

d. let experts do their jobs.

You have at your tactical disposal a mechanized infantry battalion and a tank squadron. Here they are lined up for their photo op:




FIRST CANADIAN ARMY
IN THE LIBERATION OF HOLLAND
1944-45
MILES
NORTH
SEA
EAST FRISIAN ISLANDS
WEST FRISIAN ISLANDS
IJSSELMEER
Amsterdam
Groningen
Antwerp
Rotterdam
The Hague
Haarlem
Oldenburg
Osnabruck
Dortmund
Wuppertal
Nijmegen
Arnhem
Emmerich
Dusseldorf
Utrecht
Ghent
Bruges
Calais
Dunkirk
Ostend
Great Yarmouth
Lowestoft
Norwich
Leeuwarden
Haarlem
Emden
Meppel
Zwolle
Deventer
Apeldoorn
Duisburg
Essen
Wesel
Breda
Tilburg