

Archived Content

Information identified as archived on the Web is for reference, research or record-keeping purposes. It has not been altered or updated after the date of archiving. Web pages that are archived on the Web are not subject to the Government of Canada Web Standards.

As per the [Communications Policy of the Government of Canada](#), you can request alternate formats on the "[Contact Us](#)" page.

Information archivée dans le Web

Information archivée dans le Web à des fins de consultation, de recherche ou de tenue de documents. Cette dernière n'a aucunement été modifiée ni mise à jour depuis sa date de mise en archive. Les pages archivées dans le Web ne sont pas assujetties aux normes qui s'appliquent aux sites Web du gouvernement du Canada.

Conformément à la [Politique de communication du gouvernement du Canada](#), vous pouvez demander de recevoir cette information dans tout autre format de rechange à la page « [Contactez-nous](#) ».

CANADIAN FORCES COLLEGE / COLLÈGE DES FORCES CANADIENNES

NATIONAL SECURITY STUDIES COURSE # 6

COURS DES ÉTUDES DE SÉCURITÉ NATIONALE # 6

**MULTINATIONAL LOGISTICS, A MUST FOR CANADA;
BUT BEWARE OF THE PITFALLS**

by/ par

Colonel M. Pouliot

3 June 2004

This paper was written by a student attending the Canadian Forces College in fulfilment of one of the requirements of the Course of Studies. The paper is a scholastic document, and thus contains facts and opinions, which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence. This paper may not be released, quoted or copied except with the express permission of the Canadian Department of National Defence.

La présente étude a été rédigée par un stagiaire du Collège des Forces canadiennes pour satisfaire à l'une des exigences du cours. L'étude est un document qui se rapporte au cours et contient donc des faits et des opinions que seul l'auteur considère appropriés et convenables au sujet. Elle ne reflète pas nécessairement la politique ou l'opinion d'un organisme quelconque, y compris le gouvernement du Canada et le ministère de la Défense nationale du Canada. Il est défendu de diffuser, de citer ou de reproduire cette étude sans la permission expresse du ministère de la Défense nationale

ABSTRACT

The Canadian Forces (CF) is currently suffering from a blatant lack of support troops. The consequences of this shortfall are brought to bear on Canada's capability to support deployments.

Although the CF have implemented measures, such as the integration of civilian contracting, Canada may be left in an awkward situation because some situations will nonetheless demand military support troops.

Since Canada will most likely embark on out of country deployments within a coalition, Multinational Logistics (MNL) arrangements offer a solution that can provide a host of potential advantages.

After identifying shortfalls in logistics resources both in Canada and western military forces, then outlining what is meant by MNL, the author examines United Nations and NATO approaches to this concept. The advantages along with the risks and difficulties involved are identified before deductions are drawn to determine how the CF should initiate this project. Subsequently the author delineates strategic level headquarters' guidelines for project initiation such as: the need to at least maintain current support capabilities, the early involvement of civilian contractors, the need to identify key partners with whom to pursue pre-arrangements, the need to identify unique national requirements or high risks functions, and the need to identify possible support functions for which Canada could take a role specialist or lead nation role.

The author concludes that Canada should plan for MNL arrangements through carefully studied strategic choices to minimize the inherent risks.

Un pour tous, tous pour un.
Alexandre Dumas

INTRODUCTION

Let's imagine for a few minutes that you are the Commander of a coalition force about to disembark in a new theatre of operations. During the last few months you have thoroughly completed your mission analysis and have determined, among the multitude of other issues to deal with, how many troops you will require. Although your mission has a United Nations (UN) mandate and has been approved by all North Atlantic Treaty Organization (NATO) member countries at the North Atlantic Council (NAC), some key elements of the Statement of Requirements have not yet been filled and many Nations are limiting their participation because their military forces are spread too thin or are over tasked. It will be especially difficult to fill requirements and to come up with engineers, communications and logistics resources.

Yet, as you leave the aircraft and are hit by the humid air rising off the tarmac that stretches out from a minuscule airport somewhere in Africa, you notice that there are other similar aircraft offloading equipment from each of the twelve other Nations participating in your mission. Every one of the twelve National Support Elements are occupying all available space and their footprint stretches beyond the security fence outside the airport perimeter. The duplication of equipment and effort sprawled out before you is unbelievable... primarily because you still do not have all of the resources required to accomplish your mission.

This is a fictitious scenario, but it closely mirrors what is actually transpiring in many multinational operations such as the International Security Assistance Force (ISAF) in Kabul or the NATO deployment to Bosnia. The notion of Multinational Logistics is one step, among others, that can be taken to address the problems affecting support to modern deployed operations.

AIM

In the Canadian Forces (CF), both personnel strength and defence spending have been drastically reduced - most notably in support related occupations and equipment, yet the skills and capabilities they provide are inevitably required when Canadian military forces are deployed. The effect of force reduction coupled with increased deployments has led to overloading and, as a result, Canada may have to turn to coalition based multinational logistics (MNL) arrangements. The aim of this essay is to demonstrate that Canada must participate in MNL when deploying troops to achieve economies in equipment and personnel resources while determining strategic direction to minimize exposure to MNL risks when embarking on this type of operational venture.

APPROACH

In order to achieve the aim, this paper will be divided into five parts. First, a look at the difficulties encountered by Canada and numerous other nations in providing adequate sustained logistical support in today's operations. Second, MNL will be defined. Then, the UN and NATO approaches to MNL will be analysed. The fourth section will focus on the advantages and risks or difficulties inherent in MNL. Finally, the strategic level conditions that would allow Canada to minimize exposure to risk while optimizing required support to deployed troops participating in multinational operations will be identified.

A CANADIAN PROBLEM

CF downsizing to an effective strength of approximately 60,000 military personnel has inevitably led to a drastic reduction in the number of available support troops. For example, a comparison of effective strength from 1984 to today reveals an

overall reduction of 27%¹ of military personnel that has translated into a 38% reduction of Logistics Branch support trades people.²

However, during this same period, there has been a shift increasing international operations that has resulted in the deployment and sustainment of expeditionary forces from Canada at a much higher frequency. Canadian troops experienced a higher operational tempo, resource constraints as well as additional force reductions.³ The support problem has been partially managed by contracting out, for both in Canada as well as out of country support, to civilian private sector enterprises.⁴ While this outsourcing has provided some stability and restored some capability, for many missions requiring military support, the CF still had to “make ends meet” by setting aside its own rules mandating the compulsory length of time troops spend in Canada in between missions and creating “exceptions” for a growing percentage of its support trades people. CF members, their families, retired personnel, coalition partner nations as well as defence critics have all complained that Canada now lacks the necessary logistical capabilities to sustain an operational role overseas.⁵

Despite the reductions in personnel strength and capabilities, the political agenda seems to have remained unchanged. The Governor General says that “[o]ur foreign policy objectives require a meaningful capacity to contribute militarily in support of

¹ Department of National Defence, *1985-1986 Report on Plans and Priorities, Part III Estimates* (Ottawa: Supply and Services Canada, 1985), 21. From a strength of 82,740 in 1984 compared to the 60,000 in 2003.

² Rafferty, Mike. Logistics Branch Secretariat in Ottawa. E-mail to author dated 12 March 2004. Numbers provided by the Logistics Branch secretariat: 16,000 in 1984 compared to 10,000 in 2004. These include the Logistics Branch trades total strength.

³ Larry Lashkevitch (BGen) and Frank Bogner (Maj). “Multinational Logistics – The Canadian Experience” Presentation made at the Senior NATO Logistician Conference (SNLC). Brussels, 22-23 April 2002. Slide 3.

⁴ Use of Frontec in Bosnia from Sept 2000 up to Sept 2003. CANCAP (SNC Lavalin and PAE) used in Bosnia since Sep 2003 and in Kabul since May 2003. Information received from office of JSG SSO Plans, Lcol Michael Patchett e-mail 23 March 2004.

⁵ Louis A. Delvoie.” Canada and International Security operations: The search for policy rationales”. *Canada and the New World Order; Facing the New Millenium*, (Toronto, 2000) p.30

collective efforts to safeguard international peace and security.”⁶ Or the Minister of National Defence has indicated that:

The Canadian Forces must have the ability to fulfill any mission necessary to effectively defend Canada, protect the continent and contribute to international peace and security. ... The government must be able to swiftly send our personnel and equipment where they're needed whether it's across the country or around the world. ... The Canadian Forces must have the means to support and sustain its operations for as long as they are needed and sustainability is not something that should come at the expense of quality of life and terms of service of our soldiers, sailors, airmen and women.⁷

The political message is clear: the CF will continue to be involved in overseas operational missions such as the recent deployment with the International Security Assistance Force (ISAF) in Kabul for *Operation Athena*, or the March 2004 mission to Haiti for *Operation Halo*. These deployments were undertaken despite previous announcements that the CF, particularly the Army, was operationally tasked to its limits.⁸ Concerns regarding over-tasking were also voiced through the Standing Committee on National Defence and Veterans Affairs on Quality of Life in the Canadian Forces, dealing mainly with personnel tempo “assessing the effects of increased time away from home spent by CF members as a result of their military duties”.⁹

⁶ Governor General. *Speech from the Throne to Open the Third Session of the Thirty-Seventh Parliament of Canada*. Ottawa 2 Feb 2004. 21.

⁷ Pratt, David, “Defence Minister speaks at 20th annual CDAI Seminar” 26 Feb 2004, 2.

⁸ Canadian Press. “‘Stretched thin’ troops will go to Haiti.” Toronto Star, 1 March 2004, 07:30 PM. Available from:
http://www.thestar.com/NASApp/cs/ContentServer?pagename=thestar/Layout/Article_Type1&c=Article&cid=1078182092751&call_pageid=968332188492&col=968793972154 accessed 17 March 2004.

⁹ Canada. Department of National Defence. The Standing Committee on National Defence and Veterans Affairs – The quality of Life in the Canadian Forces.
http://www.dnd.ca/hr/scondva/engraph/home_e.asp accessed on 14 April 2004.

However, the political reasons and operational considerations that will likely lead to future CF missions with allies are not new. In fact, this was the case in 1947 when the Honourable Brooke Claxton, then Minister of National Defence, indicated this intention when he stated in the House of Commons: “ [the CF is] to carry out any undertaking which by our own voluntary act we may assume in cooperation with friendly nations or under effective plan of collective action under the United Nations.”¹⁰

Therefore, assuming that the numbers of support troops will not increase in the near future and that there will be no significant improvement, nor major innovation in equipment based capabilities, other solutions must be found to ensure that both Canadian troops deployed on operations receive adequate support while quality of life for support troops is also maintained.

A MULTINATIONAL PROBLEM

Downsizing, coupled with increased operational tempo and the resulting problems, are not unique to Canada. “Since the end of the Cold War, NATO’s overall defence expenditures have declined by about 22% as nations sought to cash the ‘peace dividend’”.¹¹ Spending cuts and the resulting decline in capability led NATO to study its deficiencies at the 1999 Washington summit. This study concluded that, among the five key deficient areas requiring improvement, the first two were logistics oriented: the first being deployability and mobility with the second including sustainability and logistics.¹² In its search for solutions, NATO has turned to “Multinational logistics ... [which] features prominently in the Defence Capability Initiative as a route to addressing

¹⁰ Douglas Bland. *The Administration of Defence Policy in Canada 1947 to 1985*, (Kingston: R.P. Frye Co., 1987, 2

¹¹ Bernd A. Goetze (Dr). “NATO and the defence Capabilities initiative.” *The Atlantic Council of Canada*. Paper 1/01. Toronto. Spring 2000. 4

¹² NATO. *NATO Today, Building better security and stability for all*. Brochure from NATO Office of Information and Press. Brussels, 2002, 8.

shortfalls in Alliance Logistics capability, primarily in the areas of sustainability and deployability.”¹³

Not surprisingly, for most nations, including the United States, “continued downsizing and ever decreasing defence spending for almost all first world countries will drive us [the United States] more and more to conduct multinational operations ... single nation operations could be the exception rather than the rule.”¹⁴ A source citing a soon to be published account of Operation *Iraqi Freedom* is expected to expose some serious flaws discovered in US Army logistic support attributed to various personnel strength and budgetary reductions conducted over the past few years.¹⁵

The same requirement for logistic troops is being experienced in Kabul under ISAF: “promises to expand the operation beyond Kabul have not been matched by commitments of troops and equipment, starving the force for crucial rapid-reaction forces, combat air support and logistics.”¹⁶

WHAT IS MULTINATIONAL LOGISTICS

The notion of MNL is certainly not new. Major General Julian Thompson in his study of Logistics in Armed conflict mentions that Crusaders had learned the logistics lessons of the early years of battle during the First Crusade displaying more cooperation among national contingents.¹⁷ Thompson also tells about UN contingents receiving equipment, weapons, and logistics including uniforms from the US during the Korean

¹³ Philip, M. Miles. (Gp Capt UKAF). “Multinationality in Logistics: a strategic overview report”, From Notes to Power Point slides presented at the Logistic Coordination Board, NATO (Rome, 21 Nov 2002).

¹⁴ Robert J. Spidel. “Multinational Logistics in NATO: Will it work?” Strategy Research Project. Carlisle Barracks: US Army War College, 15 April 1996. 1, 6.

¹⁵ Keith Andrew Bettinger. “When the wheels fall off”. Asia Times Online co. 13 Feb 2004 from www.atimes.com/atimes/middle_east/FB13AK01.html accessed on 11 March 2004

¹⁶ Paul Koring, “NATO mission in Afghanistan exposes chink in bloc's armour,” *Globe and Mail*, 15 April 2004, A-16. From <http://www.theglobeandmail.com/servlet/ArticleNews/TPStory/LAC/20040415/NATO15/TPInternational/Asia> accessed on 15 April 2004.

¹⁷ Julian Thompson, “The Lifeblood of War. Logistics in Armed Conflict” Brassey’s. UK 21.

conflict.¹⁸ A more recent example is the United Nations Disengagement Force (UNDOF) on the Golan Heights in the Middle East, where since 1974, Canada, Poland (and now Japan) along with a UN civilian component provide logistics support to the UN force.¹⁹ In its broadest sense, MNL can involve the acquisition dimension of logistics, where two or more nations get together to buy their military equipment. The United Nations has been purchasing equipment to be used by all nations and then storing it in the Brindisi logistics base upon mission closure.²⁰ There would certainly be advantages to Canada's participation in multinational acquisition, but there are also many barriers preventing it including national contracting rules. Therefore, for the purposes of this essay, only the consumer facet of MNL will be examined identifying its possibilities for optimizing support while reducing the burden of frequent deployments on CF support troops.

In the NATO context, other than the occasional sharing of resources or recent attempts at multinational formations (such as the Franco-German brigade and the Euro Corps), MNL was almost a non-issue because NATO doctrine had, until recently, determined that logistics was exclusively a national responsibility.²¹ Both editions of the NATO Logistics Handbook (1986) and the revised version of 1989 state that “it is a national responsibility to make logistic support arrangements that are in accordance with Allied plans.”²² There were, however a number of reports that indicated this constituted a weakness in NATO limiting Allied Forces commanders' ability to fight coherent battles.²³ The main focus before 1990 had been on equipment standardization. The example of eight main battle tanks with four different types of ammunition in the same area of operation was often cited to illustrate this point²⁴. The statement “[a]ll sorts of nails available but that they are in the wrong place, belong to someone else, are of a

¹⁸ Ibid 117.

¹⁹ United Nations. *United Nations Disengagement Observer Force*. Web page at <http://www.un.org/Depts/dpko/missions/undof/> accessed 17 March 2004.

²⁰ United Nations, Department of Peacekeeping Operations, from <http://www.un.org/Depts/dpko/dpko/intro/base.htm> accessed 18 March 2004.

²¹ US Army. FM100-23 Peace Operations, chap 4 Logistics. 4-2. From http://www.globalsecurity.org/military/library/policy/army/fm/100-23/fm100_6.htm accessed 17 March 2004

²² Dean Smith, “Common Logistics – A NATO Commander's Dream”, *NATO's Sixteen Nations*, June 1990, 39

²³.Ibid, 37

marginally different size and are therefore useless for the job at hand”²⁵ best describes NATO’s pre-1990 logistics situation. Sadly, not much has changed except maybe that fewer nails are now available with even fewer over tasked technicians to distribute them.

When NATO adopted an out of area vocation, the term MNL started to appear more frequently. A key logistic issue addressed by NATO today, is the ability to get a force to a disputed area, and to organize the reception, staging and onward movement of material as well as troops. Previously, only Canada and the United States had to worry about this aspect of logistics because the rest of NATO troops, occupying static defensive positions relatively close to their home bases were not too concerned with this requirement.

Although NATO has been promoting MNL for some time and has included the term in its new version of NATO Principles and Policies for Logistics, MC 319/2 issued in September of 2003²⁶, it does not yet have an “official” definition. The NATO Logistics Handbook, however, does provide the following explanation:

There is not yet a NATO definition of MNL but it is proposed that this term cover:

"The different means to logistically support operations other than purely national, such as multinational integrated logistic support, role specialization support and lead nation support."²⁷

Multinational Integrated Logistics Support, means two or more nations providing assets to a multinational logistic organization under the operational control of a NATO Commander. The concept has since been refined to include Multinational Integrated Logistics Units (MILUs) staffed and equipped by one or more nations and placed under operational control of NATO. By role specialization support, NATO means one nation

²⁴ Ibid, 37

²⁵ Ibid, 37

²⁶ NATO. *NATO Principles and Policies for Logistics*, MC 319/2, Brussels, Belgium. 26 September 2003

taking charge of a specific logistic aspect, such as a class of supply (i.e. fresh rations or fuel). The lead nation support concept involves one nation assuming the entire responsibility for a broad spectrum of logistical support.²⁸

The NATO concept of MNL gained momentum in the early post-cold war days when Allied nations decided to expand on the concept of Peace Keeping/Making missions beyond the Euro-Atlantic area.²⁹ As a US Army War college student explains it; even the United States came to the conclusion that it is logical to reduce the logistic resources deployed while leveraging logistic capabilities of partner nations.³⁰ He even envisages the increase requirements for logistic assets with the rise of humanitarian missions, where “logistic forces, supported and protected by combat forces, may have the leading and predominant role in peace operations.”³¹

In principle, all aspects of logistic and personnel support would qualify for inclusion in MNL arrangements. Therefore, based on the NATO definition of logistics, this would include: design and development, acquisition, storage, transport of personnel and material, distribution, maintenance, evacuation, disposal of materiel, construction, maintenance of facilities, acquisition of services, medical and health services.³² By extension, Canada is also including financial services.

For practical reasons, coalitions and nations will most likely target areas where resources are scarce or where they know from experience that requirements are difficult to fill. For NATO members and partners, the logistics assets most in need are: “airlift, ground support engineers, bridging equipment, explosive ordnance disposal, heavy

²⁷ NATO. *NATO Logistics Handbook*, (Brussels,1997) para 105.

²⁸ See Annex A for definitions.

²⁹ Government of Canada. *The New NATO and the Evolution of Peacekeeping: Implications for Canada*. Report of the Standing Senate Committee on Foreign Affairs, April 2000 chap IV: The New NATO: Legal Issues para 3. From <http://www.parl.gc.ca/36/2/parlbus/commbus/senate/Com-e/FORE-E/REP-E/rep07apr00part1-e.htm#Chapter%20IV:%20The%20New%20NATO%20%E2%80%93%20Legal%20Issues>

³⁰ Mark A.Bellini, “Multinational Logistics; Is it worth it?” Strategy Research Project. Carlisle Barracks: US Army War College, 6 April 2000. 1

³¹ Ibid, 2

transport, medium transport, bulk fuel, sea port operations, airport operations, railhead operations [and] movement control.”³³

Considering the heightened demand on logistic resources, MNL initiatives could reduce duplication, minimize redundancies and lessen the burden on individual nations.³⁴ However, before exploring the advantages and disadvantages of such initiatives, it is important to first examine how different coalitions, such as the UN and NATO, approach MNL.

UNITED NATIONS APPROACH

The UN support of its deployed missions has improved greatly over the years. Some will remember when the number of flags in front of a deployed UN Headquarters seemed more important than mission efficiency and performance. Today, the Department of Peacekeeping Operations has a much more robust planning cell that has served to greatly improve support capabilities. Along with other measures, it has contributed to the development of strict guidelines for troop contributing nations. The UN maintains responsibility for overall logistic support, but nations pledging stand-by forces “must be self-sustained until the UN support is established. All formed contingents are to bring levels of stock holdings to the mission area for [a] minimum of 90 days.”³⁵

In practice this means that nations are responsible for the support of their troops until the UN can put its system in place or, in the alternative, they must recruit another nation to provide that support on their behalf. In fact:

³² NATO. *NATO Principles and Policies for Logistics*, MC 319/2, Brussels, Belgium. 26 September 2003.

³³ Michael Dillenberg (Capt(N)). “Multinational Logistics, Promoting use in Force Planning and PARP processes”. Presentation made at the Senior NATO Logistician Conference (SNLC). Brussels, 22-23 April 2002. slide 13.

³⁴ NATO. *NATO Logistics Handbook* (Brussels,1997) para 1321,1323

³⁵ United Nations. *United Nations Stand-by Arrangements System Military Handbook*. Edition 2003. Military Division DPKO, 14 April 2003. p. 6 From: http://www.org/Depts/dpko/milad/fgs2/unsas_files/UNSAS accessed 4 Mar 2004

The Secretary General has encouraged the creation and identification of peacekeeping forces through regional partnership arrangements and recognized that coherent units that utilize common procedures will enhance the ability of the UN to respond to crisis.³⁶

This naturally facilitates training but has the additional benefit of facilitating the support aspects of a mission. It is hoped that among these regional arrangements, nations will be able to minimize the overall logistic footprint and reduce duplication of personnel as well as equipment.

In theatre, a senior civilian official is normally appointed as the Chief Administration Officer (CAO). The CAO controls most logistic support unless the UN did not have time to make necessary preparations. In such cases, the 90 day rule mentioned previously applies:

Only the CAO has the authority to commit UN financial resources. In particular, only the CAO can make contractual arrangements for the use of local resources, on behalf of the UN. If a military contingent requires contractual services, its commanding officer should forward his request to the CAO.³⁷

The CAO is responsible for covering all expenses in theatre including local labour. Any special or unique items or services required by individual nations must be determined in advance and, if deemed to be required for the mission, a Letter of Assist (LOA) is signed allowing the nation to acquire these items and obtain UN reimbursement. LOAs can also be established when the UN cannot provide a service, to permit a nation to provide the service in exchange for reimbursement. For example, if it is deemed more economical to use a participating nation's strategic lift to bring equipment into theatre rather than to use UN contracts, the nation may provide this

³⁶ Ibid 11

³⁷ United Nations, Department of Peacekeeping Operations, *Directive for the Force Commander of the United Nations Mission to Ethiopia and Eritrea UNMEE*, New York, MPS/6036(FC) Draft of 30 Oct 2000. 7

service and then be reimbursed under the pre-approved LOA. This service could be provided to the nation itself, to another nation or to the entire force.

If the item or service requested is deemed to be at a higher standard than the one provided by the UN, it is called ‘above the normal standard’ (ANS) and the UN will not reimburse the nation. If this ANS item or service is nonetheless acquired in theatre, the requesting nation must still go through the mission CAO who will then make arrangements for the purchase or contract from a contractor or another contributing nation. ANS acquisitions are processed in this manner because the CAO is the sole authority within that theatre allowed to enter into transactions. Upon acquisition of ANS items or services, the requesting nation will then reimburse the UN. One example is the local hiring of extra labour for national support tasks. In this case, a centralized system control exercised by the CAO will avoid bidding wars between nations and ensure equal treatment of all mission local employees regardless of where they will work.

Personnel required for a specific mission are reimbursed according to their type. For example, various specialist troops will be paid at a higher rate than infantry, according to the UN cost manual.

For equipment, reimbursement is based on a system developed in 1996, called the contingent-owned equipment (COE) system. According to the category and type of equipment, nations can decide to fill the UN requirement via a “wet lease” whereby the nation maintains the equipment, or under a “dry lease” whereby the UN maintains the equipment. Both types of leasing are reimbursed as determined by the UN cost manual and are reconfirmed by Memorandum of Understanding (MOU) signed by the troop contributing nation and the UN prior to deployment³⁸. Reimbursement protocols used to generate a lot of debate. Nations had some latitude in bringing the amount of equipment they felt was required to accomplish the task. As there was often very little time to establish contracts prior to deployment, the UN HQ often contested this interpretation

after mission completion. Leasing could often get even more complex if the Force Commander used extra nationally owned equipment without proper documentation. The establishment of a statement of requirements that listed all equipment required prior to deployment, the signature of a MOU prior to deployment, the inspection of all equipment upon arrival in theatre or at the port of embarkation as well as the revision of the UN cost manual greatly reduced possible misunderstandings.

Additional staff hired at UN HQ in New York provides much better planning, control and administration of mission support thereby also reducing tensions. These new procedures also allow more transparency in decision-making and provide all parties with a better understanding of transactions. For example, UN staff conducts inspections of equipment brought into theatre to validate number, type, age and level of maintenance.³⁹

Other than for the early stages of a quick deployment, the UN logistics system is mainly built upon the support provided by civilian employees or contractors. Compared with traditional military operations, this requires a relatively peaceful environment. The security situation in Chapter VII⁴⁰ operations may however prevent employment of UN civilian employees or contractors. In such cases, the UN relies on support provided by one or more of the participating nations and reimburses the services and equipment used. The same method may be used when quick reaction time does not allow the set up of the normal UN civilian support systems. In this case, the UN relies on deployed unit self sufficiency or support provided by one or more of the participating nations.

³⁸ United Nations, “Manual on Policies and Procedures concerning reimbursement and control of contingent-owned equipment of troop-contributors participating in Peacekeeping missions (COE Manual)”, UNNY ref: FMSS/DPK/13032 dated 16 April 2002. 2-1.

³⁹ Ibid Chap 3

⁴⁰ United Nations, “Charter of the United Nations” 26 June 1945. Article 42 of Chapter VII of the Charter allows in some circumstances the use of force to implement a UN resolution, as opposed to a Chapter VI dealing exclusively with pacific settlements such as an Observer mission. Available from <http://www.un.org/aboutun/charter/> accessed 18 March 2004.

STAND-BY HIGH READINESS BRIGADE (SHIRBRIG) example

In order to accelerate the time required to launch a mission, the idea of stand-by and high readiness forces at the disposal of the UN has been discussed at some length, and more seriously in the early 1990's. Canada was involved in the elaboration of a plan to provide the UN with a brigade-sized formation maintained at a high level of readiness. The Stand-by Forces High Readiness Brigade (SHIRBRIG) when activated by the UN could reach four to five thousand peacekeeping troops.⁴¹ Canada is amongst 16 contributing nations.⁴²

The logistics approach to the SHIRBRIG, as found in the 1997 Memorandum of Understanding, is summarized as follows:

To obtain efficiency of support operations and to minimize the support tail of the SHIRBRIG, resources will be combined and shared as much as possible through bi- or multinational cooperation and through the provision of support by the UN, lead or role specialist nations. To achieve this, a logistical concept will be developed and approved by the SC [steering committee] /SHIRBRIG.⁴³

The resulting logistics concept states that:

- a. the UN is responsible for fuel, water and rations;
 - b. a role specialist nation will look after transportation and movement control;
- and

⁴¹ Canada. Department of National Defence. *The origins and status of SHIRBRIG*, Assistant Deputy Minister (Public Affairs)/ ADM(PA). BG-99.033a. 21 September 2000. available from http://www.dnd.ca/site/newsroom/view_news_e.asp?id=180 accessed 16 Feb 2004. 1 Current participants include Argentina, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, Ireland, Italy, Netherlands, New Zealand, Norway, Poland, Romania, and Sweden.

⁴² 16 nations are currently members of SHIRBRIG: Argentina, Austria, Canada, Denmark, Finland, Italy, Ireland, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, and Sweden. Argentina has temporarily suspended its membership. 11 nations have signed all MOUs and letter on intent. 5 additional countries participate as observers: Chile, Czech Republic, Hungary, Jordan and Senegal. SHIRBRIG Facts, from the SHIRBRIG Denmark web site available from <http://www.shirbrig.dk/index.htm> accessed 26 May 2004.

⁴³ United Nations. SHIRBRIG. *Memorandum of Understanding (MOU) concerning Operations, funding, Administration and Status of the Multinational United Nations stand-By High Readiness Brigade.*

- c. the different national support elements will look after all other commodities.⁴⁴

The organization chart of SHIRBRIG shows a brigade Logistics centre to provide the collective responsibilities described in the logistics concept, mainly fuel, water, rations, transportation and movement control, however, it does not control the participating nations National Support Elements providing the remaining logistics and personnel functions.

SHIRBRIG also suffers from the same difficulties and setbacks as most nations, it has not been able to recruit enough service support troops, however, “efforts continue to encourage countries to participate.”⁴⁵

The overriding principle is that “logistic support for the troop contributing nations in the force will ultimately be a national responsibility as governed by bilateral negotiations between the troop contributing nation and the UN.”⁴⁶ This concept may seem rather ambiguous, but a nation should always feel responsible for the support of its deployed troops. In this support concept, an authority or a nation can delegate, but ultimately will always be responsible for its forces! This is a major point on which we will return in part 5.

NATO APPROACH

As mentioned earlier in the section defining MNL, NATO’s approach to support until the 1990’s was that logistics was a national responsibility. The new NATO Principles and Policies on Logistics in its 26 September 2003 version states:

9 March 1997. Available from <http://www.shirbrig.dk/shirbrig/documents/MOU%20SB.pdf> 4 March 2004. 4.

⁴⁴ Dave Wu, “Post-Conference Report UN SHIRBRIG commander’s conference held in Helsinki, Finland, 12-19 Nov 03”, 1000-1(J5 Log) Kingston, JOG HQ,25 Nov 2003. 8

⁴⁵ Canada. Department of National Defence. *The origins and status of SHIRBRIG*, Assistant Deputy Minister (Public Affairs)/ ADM(PA). BG-99.033a. 21 September 2000. available from http://www.dnd.ca/site/newsroom/view_news_e.asp?id=180 accessed 16 Feb 2004. 1

⁴⁶ United Nations. Shirbrig. *Memorandum of Understanding (MOU) concerning Operations, funding, Administration and Status of the Multinational United Nations stand-By High Readiness Brigade.*

[t]he shift to more expeditionary operations has significant implications for NATO logistics policy and posture. In particular, expanding the scope for the operations for NATO forces to include defence against terrorism missions enhances the probability of deployment of a rapid military response beyond NATO territory. The deployment of forces to locations with little or no Host Nation Support (HNS), at much a greater distances than previously necessary, operating along extended and perhaps very limited lines of communication, places an emphasis on deployable logistic capabilities that were less important for territorially-based defence.⁴⁷

As mentioned earlier, the 1999 Washington summit confirmed NATO deficiencies in deployable logistics support units integral to deployed formations but also “assured access to strategic lift and deployable logistic enablers.”⁴⁸

There are numerous NATO initiatives involving MNL, for examples: “[t]he central European Pipeline System [as well as] the NATO Maintenance and Supply Agency (NAMSA) are working models.”⁴⁹ Headquartered in Luxemburg, NAMSA acts “as a kind of international clearinghouse.”⁵⁰ NAMSA’s main task is to assist NATO nations by organizing common procurement and supply of spare parts as well as arranging maintenance and repair services required for the support of various inventoried weapon systems. This assistance is available whenever two or more nations operate the same system and have made a conscious decision to use NAMSA’s support facilities.⁵¹ But these organizations were created for the static defence concept of pre-1989 and although they provide valued support, they

9 March 1997. Available from <http://www.shirbrig.dk/shirbrig/documents/MOU%20SB.pdf> 4 March 2004.4.

⁴⁷ NATO. *NATO Principles and Policies for Logistics*, MC 319/2, Brussels, Belgium. 26 September 2003. 1-2

⁴⁸ Ibid 2.

⁴⁹ Hubert L. Quick Jr. (Lcol US Army). “Multinational Logistics: a CINC’S tools for Implementation” Strategy Research Project. Carlisle Barracks: US Army War College, 19 Jan 1996, 3.

⁵⁰ Hubert L. Quick Jr. (Lcol US Army). “Multinational Logistics: a CINC’S tools for Implementation” Strategy Research Project. Carlisle Barracks: US Army War College, 19 Jan 1996, 10.

⁵¹ NATO “About NAMSA” NATO Maintenance and Supply Agency web site at http://www.namsa.nato.int/about/about_e.htm accessed on 24 March 2004

have not been extensively used on recent operations and do little to alleviate the need for deployed Canadian logistics resources on out of area operations.

The latest NATO initiative in MNL is the Multinational Integrated Logistic Unit (MILU). The Partnership for Peace nations have shown significant interest in this concept at various logistic meetings NATO held with them. This is particularly true of those who were hoping for full membership accession. Unfortunately very few tangible successes have emerged, as described by Group Captain Miles at a November 2002 NATO Logistics Coordination Board:

Progress on the pre-arranged MILUs has been disappointing although the realization that theatre-level Reception, Staging and Onward Movement capability was a particular weakness in the Alliance, as borne out by recent experience in Balkans Air Ports of Debarcation, has very recently given this work added impetus.⁵²

In spite of this disappointment, all present were encouraged to continue work on MILUs as it optimizes force structure in order to bring economies. It also contributes to the growth of the embryonic NATO expeditionary logistic capability.⁵³

Another interesting NATO approach is the Multinational Joint Logistics Centre (MJLC):

The MJLC concept is to be regarded as the logistic pillar of the Combined Joint Task Force (CJTF) concept (MC 389) [Military Implementation of the CJTF Concept]. It provides for the tools in terms of structures and procedures which the NATO Commander needs to exercise his logistic authorities and responsibilities in an effective and well coordinated fashion.⁵⁴

⁵² Phil M. Miles, (Gp Capt UKAF). "Multinationality in Logistics: a strategic overview report", Notes to Power Point slides presented at the Logistic Coordination Board, NATO, 21 Nov 2002.

⁵³ Ibid

⁵⁴ NATO. *NATO Logistics Handbook*, (Brussels,1997) para 1312.

The concept has been utilized successfully on numerous exercises such as *Marcot 1998* or *Strong Resolve 2001* in a Joint environment, or on NATO naval deployments.⁵⁵

Unfortunately, many consider the MJLC as merely “noble intentions” and the concept has been slow to reap dividends on operations primarily because: “[t]he authority is too weak to exercise effective coherent control [and] the tasking line is tenuous.”⁵⁶ In summary, in spite of having a robust Logistics coordination centre such as the MJLC, the Task Force Commander still depends on the willingness of contributing nations to put their logistics assets at his disposal.

Another NATO logistics approach of interest for this paper is funding. Naturally, based on the static general defence plan of pre-1989, “NATO budget policy is virtually unchanged when it comes to logistics. Common funded items include four areas; air defence, command and control, training and exercises and reinforcement reception.”⁵⁷ In essence, no funding is allocated for deployed troops, their support or for the logistic enablers for operations. With the exceptions of a few bi-lateral arrangements among member nations, each member accomplishes these activities independently.

In the military context, apart from a limited number of permanent headquarters and small standing forces, the vast majority of military forces and assets belonging to NATO member countries remain under national command and control until such time as some or all of these, depending on the country, may be assigned to NATO for the purposes of undertaking specific military tasks. The forces of NATO countries contributing to the

⁵⁵ Meeting with Capt(N) B. Weadon, 21 May 2004.

⁵⁶ Phil M. Miles, (Gp Capt UKAF). “Multinationality in Logistics: a strategic overview report”, Notes to Power Point slides presented at the Logistic Coordination Board, NATO, 21 Nov 2002.

Stabilisation Force led by NATO in Bosnia and Herzegovina (SFOR) and to the Kosovo Force (KFOR) are thus assigned to NATO temporarily in order to fulfill the Alliance's mandates but are trained, equipped, maintained and financed by the individual defence budgets of member nations.⁵⁸

When Supreme Headquarters Allied Europe (SHAPE) does its mission analysis and arrives at the Statement of Requirements (SOR) listing all capabilities required, member nations bid to fill some of its lines. For NATO, providing a reconnaissance squadron, an infantry battalion or a logistic unit are all considered in the same way, none qualifying for NATO reimbursement:

NATO funding does not therefore cover the procurement of military forces or of physical military assets such as ships, submarines, aircraft, tanks, artillery or weapon systems. Military manpower and materiel are assigned to the Alliance by member countries, which remain financially responsible for their provision.⁵⁹

Even the NATO Airborne Early Warning and Control Force is funded by the twelve participating nations, not NATO.⁶⁰

Funding of operations is done differently for NATO than it is for the UN. This is true not only in the allocation of reimbursements to contributing nations, but also in controlling Alliance spending in the theatre of operations. "Since NATO common and centralized funding is limited to specific categories of goods and services [listed earlier in this section], most contract actions will be funded nationally."⁶¹ NATO doctrine explains

⁵⁷ Mark A. Bellini, "Multinational Logistics; Is it worth it?" Strategy Research Project. Carlisle Barracks: US Army War College, 6 April 2000. 6

⁵⁸ NATO. The NATO Handbook, 50th Anniversary edition. Office of Information and Press, Brussels, Belgium. 1998-1999 ISBN 92-845-0134-2. 197 from <http://www.nato.int/docu/handbook/1998/handbook.pdf> accessed 17 march 2004.

⁵⁹ Ibid 198

⁶⁰ NATO AWACS web site at

in detail how contracting should be coordinated, most notably by the MJLC. However, control is difficult to exercise when individual nations pay the bills.

Unlike the UN CAO, who effectively controls all expenses, NATO doctrine can only encourage nations to enter into bilateral and multilateral agreements for the purchase of goods and services⁶². The only hint of an exception is:

for non-Article 5 and CJTF operations there might be a need for commonly funded and centrally controlled logistic assets and resources such as airports, seaports and lines of communication. Specific funding and budgetary policies will need to be developed and subsequently approved by the NAC [North Atlantic Council] on a case-by-case basis. Such policies must take into account the involvement of any participating non-NATO nations and related political implications. Early agreement by the nations is fundamental to the success of the operation and will permit further detailed logistic planning related to HNS [Host Nation Support], contracting, infrastructure engineering and development of the most appropriate and economic logistic support systems.⁶³

NATO has a multitude of doctrine manuals explaining how MNL should be conducted.⁶⁴ Those describe in details the principles but also the operating procedures to be followed at the tactical and operational levels, including templates of Memorandum of Understanding (MOU) between member or partner nations. Yet, for Joint or Land type operations, member nations have not yet agreed to provide NATO commanders with the appropriate authority to make it work. Even when the head of the MJLC sees opportunities for great savings by

⁶² Ibid 1-19

⁶³ Ibid 2-16

⁶⁴ Among others, the Military Committee (MC) 319/2 NATO Principles and Policies for Logistics Sept 2002, MC 334/1 NATO Principles and Policies for Host Nations Support (HNS), MC 336/2 NATO Principles and Policies for Movement and Transportation Allied Joint Publications (AJP) 4 Allied Joint Logistics Doctrine Jul 1999, AJP 4-4 Allied Joint Movement and Transportation Doctrine Nov 2001, AJP4-5 Allied Joint Host Nation Support Doctrine and Procedures Sept 2001, AJP 4-6 The Multinational Joint Logistic Centre Doctrine, AJP 4-9 Modes of Multinational Logistic Support ratification draft as of Dec 2002.

applying a MNL approach, if it involves funding, there are only two choices: send the proposal up the chain of command to the NAC for approval by all member nations or gather the national authorities of all contributing nations and have them sign a multinational agreement for the initiative.

The first approach has proven to bring insurmountable difficulties while the second is often impeded by the fact that once a nation has deployed its support assets, it is often reluctant to amend its ways. The case of IFOR and SFOR in Bosnia, where NATO has been involved for over eight years, shows the difficulties in applying the NATO doctrine on MNL. General Farmen, the initial NATO Commander for IFOR Support, complained about the adhocery, lack of authority and funding needed to make his organization efficient.⁶⁵ Similar issues are raised by the more recent SHAPE study of support to Bosnia and Kosovo.⁶⁶

There have been some successful attempts but normally only small scale and for limited endeavours. As an example, the Belgium, Luxembourg, Greek and Austrian (BELUGA) Transportation/Engineer unit (the Corps Support Group) created under IFOR to accomplish the Corps level transportation and some engineering tasks for the commander. The 915 strong unit capable of lifting 1000 tons with its 146 trucks was a success story in that it provided an invaluable resource to the commander. It is however interesting to note that within its camp, one nation maintained its own kitchen while combat rations, fuel, ammo, major items, repair and maintenance, role one medical, postal, laundry and a few other aspects remained a national responsibility. The only common areas were: fresh rations acquisition, bakery, water, recovery, hiring of local employees, a common reception detachment at the airport, transportation of supplies from the airport to the camp and the maintenance of the infrastructure. Communications among the four nations (Austria, Belgium and Greece were at company level while

⁶⁵ William N. Farmen, "Ad Hoc Logistics in Bosnia". *Joint Force Quarterly*, Autumn/Winter 1999-2000: 36-42 and William N. Farmen, "Wanted: a NATO Logistics Headquarters". *Joint Force Quarterly*, Spring 1998: 62-66

Luxembourg had a platoon integrated with the Belgium portion) was provided by Belgium.⁶⁷ The unit was eventually disbanded mainly caused by the difficulty of each nation to sustain the effort in personnel and amidst complaints about having to pay the fuel for transportation tasks serving the entire IFOR.⁶⁸ This unit was considered a Corps asset (under command of the NATO Ace Rapid Reaction Corps –ARRC) and provided very few tasks directly for national contingents. For example, the engineer element of the Battalion was responsible for a portion of the Main Supply Route and one of the transportation tasks was to deliver the polling material in preparation for the Bosnian elections, Fall of 1996.

NATO staffs have spent enormous amounts of time and energy developing the concept of MNL and there are a multitude of documents on the subject. Everything from the principles to detailed procedures, financial arrangements, liability issues, jurisdiction and disciplinary measures, dispute settlements and even templates of bi/multi-lateral agreements are available for the use of nations⁶⁹. All the staff work has been done. Now all that is required is the will of member nations to apply the concept, putting logistics assets at the disposal of commanders.

INTERNATIONAL SECURITY ASSISTANCE FORCE (ISAF) example

Although not originally a NATO deployment, the lead nations for the first three rotations of ISAF in Kabul were NATO members or NATO organizations with many NATO members as contributors.⁷⁰ In spite of this and the fact that the doctrine, principles

⁶⁶ David Eagles (Lcol), A. Brokke (Cdr), P. Buades, C. Rebello (Capt) and J. O'Loughlin. *Multinational logistics & Contractorisation Integrated Project Team Study* SHAPE, Mons, Fall 2002.

⁶⁷ F. Hendrickx (Lcol) *Multinational Logistics during IFOR: BELUGA*. A Power Point presentation given at the Political-Military Steering Committee on Partnership for Peace: 1999 Workshop on Development of National Defence Policy and Strategy. Sofia, Bulgaria, 27-28 Sept 1999. From http://www.isn.ethz.ch/pfpdc/documents/1999/PMSC_Sofia/Hendrickx/ accessed 13 Jan 2004.

⁶⁸ The author was commanding the Canadian National support element from Feb 95 to Sept 95 and from Jun 96 to Jan 97. These complaints were heard at various logistics conference in theatre but no written documentation was found.

⁶⁹ NATO. "Modes of Multinational Logistic Support AJP 4-9." Ratification draft Dec 2002, Annex A.

⁷⁰ ISAF I led by the British (Jan 02-Aug 02), ISAF II led by the Turks (Aug 02-Jan 03), ISAF III led by the Euro Corps - German/Dutch (Jan 03-Aug 03), NATO took over for ISAF IV on 11 Aug 03.

and procedures were agreed to by all, there was little evidence of a full implementation of the MNL concept, at least between ISAF III and IV.⁷¹

ISAF I had the right logistic approach.⁷² Soon after the announcement that the UK would be the lead nation for the deployment, a multinational logistics conference was called for 18 Dec 2001. There, possible contributing nations agreed on key planning principles:

- a. need to operate a MJLC,
- b. need to maximize multinational cooperation,
- c. maximum use of role specialization,
- d. central control of the deployment through a Forward Movement Base (FMB),
- e. simultaneous deployment and sustainment,
- f. minimal in-theatre logistic footprint,
- g. early deployment of sustainment and support forward, and
- h. the need for even-handedness.

The difficult lines of communication and the precarious situation in Kabul dictated a logistically balance deployment, ensuring sustainment of the early deployed troops even if the Kabul International Airport, the only access, was to be closed for some time.

There was a second conference on 29 Dec 2001 to confirm the key principles and to determine which nation would contribute what logistic services. General agreement was reached and as lead nation, the UK took on those areas left vacant by the contributing nations, such as the petroleum troop, the transport troop and the laundry and bath unit.

⁷¹ The author was the Commander of the Canadian Theatre Activation Team in Kabul Spring-Summer 2003, during the final days of ISAF III, preparing for the arrival of the 2,000 Canadian soldiers that would serve under ISAF IV.

⁷² R.M. Hobson (COL UK PJHQ J4). "Multinational Logistic Support to ISAF – The Lessons." Power Point Presentation to Senior NATO Logistic Conference (SNLC) Oct 2002. All the information in this ISAF I section comes from Hobson's reference.

Deployment started 28 Dec 2001, involving 18 contributing nations and experienced severe difficulties early:

- a. delay in opening Kabul airport, having to use the smaller Bagram airport, about one hour north West of Kabul,
- b. severe weather conditions,
- c. delay in activating the MJLC,
- d. numerous change in priority of movement plan, which affected the “logistical balance” (stock levels varying between 10 and 45 Days of Supplies depending on the contributing nation), and
- e. lack of visibility of the materiel brought by contributing nations.

Some contributing nations refused to divulge the material they brought in theatre, which resulted in complete imbalance. For example, some countries were able to bring bar furniture whilst others had to borrow rations from the lead nation. The MJLC was not empowered to engage the contributing nations and impose logistical discipline.

By the time the MJLC was fully manned with multinational staff, the national support elements had already been established and the opportunity to make efficiencies was lost.

Some other lessons from the UK experience include:

- a. lead nation role is very onerous and expensive,
- b. contributing nations are reluctant to share resources,
- c. duplication of critical equipment deployed within many National Support elements, and
- d. need for a robust command and control over all aspects of logistics.

The deployment was a success in that no-one went hungry, no-one ran out of fuel or lacked key materiel to accomplish the mission. But it was not as efficient as it could have been. If ISAF rotations continue, the same key support personnel will have to return more frequently than if MNL had been implemented early.

The UK briefing clearly indicates the efforts put forward to embrace the MNL principles. In contrast, the official ISAF II briefing states its logistics policy as: “logistics is a national responsibility.”⁷³ There were some successful attempts such as airport management eventually undertaken by Germany as the lead nation, fuel distribution provided by the UK and the role 2 and 3 medical facilities during ISAF III were provided respectively by the Netherlands and Germany. However, the airport management was unable to streamline the material handling equipment and each National Support Element had a full team on the tarmac servicing only their national aircraft. Consequently, in spite of the early efforts of ISAF I logistic staff, the final impression was that ISAF Logistic planning as a coalition was still an afterthought!

ADVANTAGES OF MULTINATIONAL LOGISTICS

Naturally, the reasons pushing a nation towards a coalition rather than unilateral operations should apply to the support environment. Based purely on the support aspects, the advantages of participating in a form of MNL can be categorized into two basic areas: operational advantages and, cost savings in finance, personnel, and in equipment.

*List of advantages*⁷⁴

I. Operational

- reduced footprint
- optimized use of infrastructure
- increased operational flexibility for commanders
- minimized competition for scarce resources
- strong political message

II. Savings

- reduced duplication
- reduced personnel and equipment
- economies of scale
- overall cost reduction

⁷³ E. Durgal, (LCol TUA). “Logistics in International Security Assistance Force (IASF II)”, Power point slides presented at the Logistics Coordination Board, NATO 21 November 2002. slide 10.

⁷⁴ The list of advantages is taken from different sources, many quoted specifically in the text. Others from the author’s experience of over 25 months on 2 UN and 2 NATO missions between Fall of 1992 and Fall of 2003. The main source for the initial list is “Multinational Log Solutions from a nation’s perspective” Power Point presentation prepared by Germany Joint Service support staff II. NATO Senior Logistics Conference (SNLC), Brussels Oct 2001 slide 19.

- sharing of experience
- reduced and shared burden of high readiness
- only one logistics focal point
- leveraged national areas of expertise

I. The operational advantages of multinational logistics:

Reduced footprint. Operationally, some locations may not provide enough space to deploy the entire national complement of logistic assets each nation may wish to bring. Naturally, this is compounded by several nations having the same requirements. These factors, combined with a narrow point of entry into a theatre of operations may very well leave no room for choice and thereby require the formation of MNL. If a nation does not have plans for the pooling of logistics resources, this situation leads to adhocery and creates waste. For many reasons, including security, reducing the logistical footprint may even become an operational imperative.

Optimized use of infrastructure. Availability of infrastructure may also be very limited, thus not providing the same opportunity for all. In fact, if not well managed, limited availability will often lead to a “first come first served” approach or to a bidding war among allies. This applies not only to infrastructure for individual use by a nation for accommodation, office space or storage, but also to common infrastructure such as sea port facilities where berths, offloading capabilities or port control assets are normally very limited. The same is true for airports where only one set of approach radars, lighting system, a single control tower and often limited parking areas usually force all participants into some form of sharing.

Increased operational flexibility for commanders. Currently, coalition commanders have very little visibility on support resources because they are often hidden in National Support Elements controlled by the contributing nations. MNL allow for a certain degree of control by the coalition commander. Such arrangements can therefore become a

definite advantage for commanders by increasing operational flexibility and allowing for greater degree of control over the allocation of priorities.

Minimized competition for scarce resources. Minimizing competition for scarce resources can become an operational advantage because foreign troops generate less of a burden on the local economy. The principles of MNL also prevent an escalation of prices (which also becomes a cost avoidance).

Strong political message. While less tangible than some of the other benefits, it is a well-known fact that good inter-nation sharing arrangements send a strong political message about the solidity of the alliance. For example, “US policy showed a marked preference for participation in coalition operations to provide political legitimacy and share military and financial burdens.”⁷⁵

Sharing of experience. Although difficult to quantify, there is a definite advantage to be gained by military personnel rubbing shoulders and working closely with logisticians from other nations:

Diversity should be understood as the varied perspectives and approaches members of different identity groups bring to the workplace. A diverse work force improves the organization by challenging basic assumptions and thinking of innovative ways to redesign processes, reach goals, frame tasks, create effective teams, communicate ideas, and lead.⁷⁶

Reduced and shared burden of high readiness. Reducing the burden of high readiness brings numerous advantages such as allowing more troops to be tasked to other commitments, deployments or to give an operational pause for supporting troops. The

⁷⁵ Frank. Gorman, “Issues 2000 Multinational Logistics: Managing Diversity.” *Air Force Journal of Logistics*, 24, Fall 2000: 8-15, 10

⁷⁶ David A. Thomas and Robin J. Ely, “Making Differences Matter: A New Paradigm for Managing Diversity,” *Harvard Business Review*, Sep-Oct 96, 80. From Frank. Gorman, “Issues 2000 Multinational Logistics: Managing Diversity.” *Air Force Journal of Logistics*, 24, Fall 2000: 8-15, 11

greatest benefit is the economy that is realised by reducing the number of troops required on stand by for extended periods of time.

Only one logistics focal point. This point complements the operational commanders' flexibility because all logistical problems are transparent to the MNL organization. Commanders can set all priorities. Another major advantage of having only one logistics focal point is that it facilitates exchanges with Host Nation Support coordinators. Finally, it is a source of advice for National Support Elements and also is a point of exchange for information and services to optimize use of assets.

Leveraged national areas of expertise. Nations may have developed areas of expertise that would benefit the coalition. In such cases, this expertise can be leveraged in an "exchange of services" contributing to the reduction of possible duplication of personnel and equipment.

II. The savings advantages of multinational logistics::

Reduced duplication. Reducing duplication, minimizing redundancies and lessening the burden on individual nations⁷⁷ all contribute to doing the job with less personnel and equipment. In spite of the planning effort by the UK for ISAF I to achieve maximum cooperation and reduction of the logistic footprint, contributing nations deployed "so many bath units collocated that there were significant problems in supplying the water and in getting rid of the waste water."⁷⁸ The irony is that at the initial logistics conference, none of the participating nation had volunteered to provide the force laundry and bath unit, forcing the Lead nation to fill the gap.⁷⁹

Reduced personnel and equipment. Supreme Headquarters Allied Power Europe (SHAPE) sponsored a study to attempt to confirm the hypothesis that the implementation

⁷⁷ NATO. *NATO Logistics Handbook*. (Brussels,1997) para 1321,1323

⁷⁸ R.M. Hobson (COL UK PJHQ J4). "Multinational Logistic Support to ISAF – The Lessons." Power Point Presentation to Senior NATO Logistic Conference (SNLC) Oct 2002. Slide 11.

⁷⁹ Ibid slide 4.

of MNL reduces the need for personnel and equipment. A British firm, CORDA, conducted a Cost Benefit Analysis to quantify the potential savings created by nations working together.⁸⁰

The study examined five logistics functional areas, with the aim of identifying the savings (if any) resulting from providing those functions multinationally rather than individually by each nation. The areas are: SFOR [Stabilisation Force in Bosnia-Herzegovina] sea operations at Ploce and Split [in Croatia]; KFOR [Kosovo Force] airport reception and staging at Petrovec; military police operations and transport co-ordination in KFOR Multinational Brigade (Centre) (MNB(C)); and fuel distribution throughout KFOR.⁸¹

The summary of the study is included at Annex B. In general, CORDA's study demonstrated savings both in terms of personnel as well as equipment in the order of between 9% and 45% depending on the function, not counting the secondary cost avoidance in training to maintain a forward presence.⁸²

Economies of scale. For consumables required by deployed forces such as fresh rations, fuel or daily cleaning material, there are definite savings that can be accrued by approaching suppliers with a single voice. Larger volumes of products or services negotiated normally bring better prices. This also avoids competition among nations that usually tends to quickly drive up prices and creating, among the often limited number of suppliers, the false impression of increased demand. To a certain extent, the use of NAMSA clearinghouse function mentioned earlier could help produce economies of scale. Additionally, if a nation is going to have a large logistic contingent to support its

⁸⁰ Suzanne Griffin, "Project: Logistical Planning. Task SX – A Cost Benefit Analysis Study of NATO Multinational Logistics in the Balkans" Summary Report. CORDA ref: CR1185/MR1/3, CORDA Limited, New Malden Surrey, 24 May 2001, 1.

⁸¹ Ibid 1

⁸² The study did not provide specific currency savings due to varied cost of a soldier or a specific piece of equipment depending on the nation providing the troops or the equipment. But for each nation these percentages could be translated into specific dollar/euro/pounds savings.

own troops it could “leverage ... resources through cost sharing and economies of scale”⁸³ as was achieved during the Korean conflict.

Overall cost reduction. MNL brings economy of equipment and personnel as well as economy of effort⁸⁴ that often translate into overall reduction in support costs.

RISKS / DIFFICULTIES

With this extensive (but sometimes overlapping) list of advantages, why then are MNL arrangements not more widely implemented?

Adapting to a new environment is not an easy task and effecting major changes in operating procedures, especially for military organizations, involves an elaborate process that starts with a major cultural change. Even when solutions presented provide a multitude of advantages, the resistance will tend to be strong. But, some of the risks and difficulties in adapting to MNL are based on valid concerns that must be addressed.

One reason is that “even though sharing of resources should in the end save money, nations are not readily willing to give them up.”⁸⁵ Nations basically want to retain control over their national assets, probably because of some of the reasons listed in the following paragraphs. These reasons have been divided into the following three categories: operational, administrative and national preference.

⁸³ Patrick J. Dulin, (Col USMC) “Finding the friction points in coalition logistics.” *Army Logistician*, Vol 34 issue 2, Mar/Apr 2002: 9.

⁸⁴ Frank. Gorman, “Issues 2000 Multinational Logistics: Managing Diversity.” *Air Force Journal of Logistics*, 24, Fall 2000: 8-15, 10

⁸⁵ Robert J. Spidel. “Multinational Logistics in NATO: Will it work?” Strategy Research Project. Carlisle Barracks: US Army War College, 15 April 1996. 8

*List of risks/difficulties*⁸⁶

I. Operational

- lack of assured commitment
- national needs & priorities
- uncertainty of replacement
- delay in decision-making
- interoperability/unique national items
- lack of logistics resources

II. Administrative

- legal aspects
- liability issues

III. National Preferences

- autonomy
- standard of support
- funding
- command & control
- data exchange
- cultural change

I. The operational risks/difficulties

Lack of assured commitment. The basic concept of MNL implies that some of the services required will be provided by another nation. How certain can anyone be about the assured commitment of another nation? Considering that each nation is sovereign and will decide whether or not to participate in future missions, long-term support arrangements and other arrangements will be uncertain.

National needs & priorities. Conversely, the reverse is also true, not knowing what one's own national situation will be when a call to activate a multinational arrangement arrives would undoubtedly curb any enthusiasm to commit too far in advance. A national decision could be made requiring forces somewhere else. Even after announcing participation, national reasons may require redeployment or, the fear that urgent national needs may not be met could also lead to the decision not to participate.

Uncertainty of replacement. Often nations who volunteered to provide services to the entire coalition were left carrying the commitment for much longer than originally anticipated because no other nation was willing or able to replace them. For example France providing bulk fuel for KFOR. Another example is the case of Italy providing the airport management in Pristina, Kosovo.⁸⁸ Some nations “urged caution with lead nation since the tendency might exist to continually use the same nation as lead.”⁸⁹ The British representative at the Logistics Coordination Board in November 2002 corroborated this, complaining about the duration of commitment of operationally deployed theatre level logistic support assets.⁹⁰

Canada's Minister of National Defence provided another example when recently discussing Canadian involvement in ISAF:

The absence of such a commitment now serves as a disincentive for other nations to volunteer. And those already on the ground have been forced to extend their stay, essentially having to pay extra for having committed themselves.

One tangible example of this is Germany's management of the Kabul airport, a vital component to the ISAF mission. They have faced great

⁸⁸ The author was Chief Mobility, one of three Branch chiefs in the directorate of the Assistant Chief of Staff Logistics at SHAPE in Belgium from 2000 to 2002 and was involved in trying to find a replacement solution for the airport management in Pristina, Kosovo and was well aware of the French dissatisfaction at no-one replacing them and the no refund NATO policy.

⁸⁹ Robert J. Spidel. “Multinational Logistics in NATO: Will it work?” Strategy Research Project. Carlisle Barracks: US Army War College, 15 April 1996. 14

⁹⁰ Phil M. Miles, (Gp Capt UKAF). “Multinationality in Logistics: a strategic overview report”, Notes to Power Point slides presented at the Logistic Coordination Board, NATO, 21 Nov 2002

difficulty in finding a nation to replace them. This is essentially punishment for good behaviour - not a good incentive structure if NATO is to achieve the long staying power that will be needed in Afghanistan.⁹¹

Delay in decision-making. As a coalition will inherently involve two or more member nations initially debating the need for a deployment and then obtaining approval from their respective governments, there will inevitably be delays in the decision process. This is also the case for the NATO North Atlantic Council (NAC), the UN and most other coalitions. “[T]he more organizational entities involved in a decision-making process, the greater the opportunity for delay, if not paralysis.”⁹² Yet logistic resources are often required very early in a deployment in order to activate the lines of communication and to organize troops staging towards the mission area or their arrival in theatre. Even if pre-arrangements are made, this characteristic delay in decision-making may very well eliminate any potential advantages if it results in one or more of the participating members leaving the impression of uncertainty regarding their participation. For example, “coalition members often introduce redundant logistics capabilities when they cannot reach an agreement rapidly on how to share assets; they then deploy those redundant assets into theatre in order to meet response time goals.”⁹³

Interoperability/unique national items. The compatibility of systems creates a major barrier to complete multinationality because each nation has its own procurement system that is often linked to its national defence industry:

Common systems begin with the procurement stage ... It is sometimes difficult to maintain commonality within a weapons system as the development and fielding periods can extend over 10-20 years. The use of

⁹¹ McCallum, John. “John McCallum Speaks to the Royal Institute of International Affairs” 3 Dec 2003. para 20. accessed from http://www.forces.gc.ca/site/newsroom/view_news_e.asp?id=1276 accessed 23 March 2004.

⁹² Andrew Natsios. “NGOs and the UN System in complex Humanitarian Emergencies: Conflict or Cooperation?” *Third World Quarterly*, Vol 16, No 3, (Sept 1995) 417, quoting Aaron Wildavsky & Jeffrey Pressman, *Implementation*, Berkeley, CA: University of California Press, 1979, pp 105-108, 147.

⁹³ Patrick J. Dulin, (Col USMC) “Finding the friction points in coalition logistics.” *Army Logistician*, Vol 34 issue 2, Mar/Apr 2002: 10.

different equipment by nations limits the ability to share logistic resources, especially in spares and maintenance areas.⁹⁴

Even in an ideal system, there will always be some unique national items that will prevent full interoperability and necessitate a national pipeline into a theatre. Such items and services include uniforms, soldier's pay, unique spare parts as well as "mortuary affairs and end items replacement [which] are inherently unique to individual nations and will remain as national functions."⁹⁵

Lack of logistic resources. The general reduction of western military forces has consequently greatly reduced their support elements. This element, coupled with the fact that most nations, other than the US and Canada, did not require a deployable type logistics until recently, has resulted in a lack of available logistic resources for past coalitions. "European allies who became part of the 'coalition of the willing' during the Gulf War experienced significant deficiencies in their capabilities to rapidly deploy forces beyond their borders, to logistically sustain them in operations outside the NATO area".⁹⁶ Additionally, "[m]ost nations have not invested in sufficient logistic capability for out of area operations or if they do have enough, its just enough. [For these reasons] many nations have continued to accept risk in standing logistic capability with minimum multinational capabilities, most nations are reluctant to give up their logistic capability for multinational use or sharing."⁹⁷ Yet, it can logically be deduced from these same reasons, that nations will not have a choice but to engage in multinational sharing of logistic resources. However, on past UN missions, it was not uncommon to have "[f]orces that arrive [in theatre] without the necessary sustainment power ... [becoming] more of a hindrance in operations other than war, let alone combat situations."⁹⁸ Those

⁹⁴ Dave Eagles. (Lcol), A. Brokke (Cdr), P. Buades, C. Rebello (Capt) and J. O'Loughlin. *Multinational logistics & Contractorisation Integrated Project Team Study* SHAPE, Mons, Fall 2002. 24.

⁹⁵ Patrick J. Dulin, (Col USMC) "Finding the friction points in coalition logistics." *Army Logistician*, Vol 34 issue 2, Mar/Apr 2002: 10

⁹⁶ Bernd A. Goetze (Dr). "NATO and the defence Capabilities initiative." *The Atlantic Council of Canada*. Paper 1/01. Toronto. Spring 2000. 4

⁹⁷ Mark A. Bellini, "Multinational Logistics; Is it worth it?" Strategy Research Project. Carlisle Barracks: US Army War College, 6 April 2000. 8

⁹⁸ Ibid 13

were the days when the addition of a new flag in front of the mission headquarters was more important than the efficiency of the force.

II. The administrative risks/difficulties

Legal issues. Numerous legal issues are invoked as barriers primarily to the acquisition of expensive systems and contracting. Barriers such as congressional notifications, foreign military sales rules, the *Buy American Act* and various trade agreements are some examples of US legal impediments⁹⁹ commonly encountered when acquiring products or services. Other nations have similar national rules. In a NATO questionnaire answered by eight nations and three Commands, six nations answered that legal parameters would limit their engagement in Multinational Integrated Logistics Units.¹⁰⁰

Liability. Responsibility and accountability in the event that something goes wrong either because of enemy activity, user negligence or even uncontrollable events, is never an easy issue to resolve when dealing with your own soldiers or equipment. This situation is all the more compounded when other nationalities are involved. This is probably another “soft issue” that may not necessarily constitute a “show stopper” preventing MNL arrangements; however, considering that a complete shift towards MNL has not yet occurred, it may be one of the reasons for not “getting on board”. In any case, memoranda of understanding or other sharing agreements will still need to specify accountabilities and liabilities.

III. The National Preferences

Autonomy. Few like to be at the mercy of others. This is also true for nations, especially when considering something as vital as support to their own troops.

⁹⁹ Patrick J. Dulin, (Col USMC) “Finding the friction points in coalition logistics.” *Army Logistician*, Vol 34 issue 2, Mar/Apr 2002: 9

¹⁰⁰ Dave Eagles. (Lcol), A. Brokke (Cdr), P. Buades, C. Rebello (Capt) and J. O’Loughlin. *Multinational logistics & Contractorisation Integrated Project Team Study* SHAPE, Mons, Fall 2002.- questionnaire result.

Standard of support. The standard of support provided under multinational arrangements may vary from one nation to another due to several factors including the level of training, quality of education and technical ability of personnel or the quality of their equipment. From the receiver point of view, confidence in the support provided by another nation will also vary accordingly. By conducting a risk analysis, some types of support will be accepted; however in other cases such as medical services, ration inspection or food preparation, some nations will insist on very high or specific standards, or will systematically accept only their own national standards or accomplish these tasks themselves.

Funding. Many nations generally expect reimbursement for services provided, probably because they are used to the UN system, especially in MNL when they are providing for others. Funding is often raised as a problem area when the possibility of MNL is initially discussed. “Without common funding, logistically capable nations, like the United States become ‘providers’ and not receivers of multinational logistics services.”¹⁰¹ For example in Bosnia:

[T]he paucity of up-front funds undermined NATO capabilities. It created financial inflexibility and prevented the development of commercial contractual arrangements for the port operations, handling equipment, food supplies, and fuel distribution - even snow removal to assist deploying forces.¹⁰²

“The funding issue is very complex ... Nations have different laws concerning funding of multinational forces and also have vastly different contracting requirements.”¹⁰³ However, despite funding concerns, benefits of sharing multinationally should outweigh the risk involved in going it alone and assuming all costs.

¹⁰¹ Mark A. Bellini, “Multinational Logistics; Is it worth it?” Strategy Research Project. Carlisle Barracks: US Army War College, 6 April 2000. 6

¹⁰² William n. Farnen, “Ad Hoc Logistics in Bosnia”. *Joint Force Quarterly*, Autumn/Winter 1999-2000: 37

¹⁰³ Robert J. Spidel. “Multinational Logistics in NATO: Will it work?” Strategy Research Project. Carlisle Barracks: US Army War College, 15 April 1996. 14

Command and Control. Unless support is restricted to role specialist nations or lead nation types of MNL, the issue of command and control can become another obstacle to implementation. It can be deduced from the many studies reviewed in this paper that, as more coalitions are formed, the arrangements for the employment of other nation's forces should be applicable to the sharing of logistics resources. The role specialist and lead nation concepts involve a "multinational commander" in theatre setting the priorities, not the national contingent. But even when agreements are reached as to the procedures, the means of command and control may still form another barrier. Very few nations have command and control equipment and there is a "lack of uniform, exportable set of command and control equipment and procedures with which to organize a coalition's logistics at the outset of an operation and to manage logistics in the conduct of the operations."¹⁰⁴

Data exchange. A good logistic system involves visibility of stocks and exchange of information on inventories. This is a major issue at the national level that is very difficult to accomplish in a multinational setting. "Complicating the situation further is the frequent inability of coalition partners to share pertinent logistics information rapidly."¹⁰⁵

Cultural change. Two dimensions involved here. One aspect deals with the shock of cultures, having soldiers of different nationalities living in proximity on the same camp. MNL arrangements may not cater to specific cultural preferences, for example types of food or food preparation. All other aspects of daily habits can also become irritants, demanding higher tolerance levels sometimes in already tensed situations. The other dimension, which was already alluded to earlier is the resistance to change. There is a definite requirement to change perceptions and accept the need for more inter-dependency by agreeing to pool logistical resources.

¹⁰⁴ Patrick J. Dulin, (Col USMC) "Finding the friction points in coalition logistics." *Army Logistician*, Vol 34 issue 2, Mar/Apr 2002: 9

¹⁰⁵ Ibid 10

Some of the risks in these three categories can probably easily be overcome, but nonetheless, they are real and must be addressed in order to achieve successful MNL arrangements. From a Canadian perspective, Canada must look into MNL closely and measure the risks before embarking on what on the surface appears to be such a logical solution, but which upon detailed examination can be marred by multiple impediments and delays.

CANADIAN STRATEGIC ANALYSIS

A. Why is Multinational Logistics a strategic concern?

Guidelines describing how the CF should approach MNL are a strategic concern for three main reasons. First, support troop shortages can seriously impact the CF's ability to support deployed troops. This facet needs to be known and well understood at the political level before decisions are made to commit Canadian troops. Secondly, the choice of key partners has a high political impact and must be coordinated well in advance with the Policy as well as the Operations groups. Finally, MNL projects need clear strategic guidelines on how the CF will support deployed troops before decisions are made to deploy them and not as an afterthought. Support has to be a major factor leading to the "GO - NO GO" decision, as it can quickly become a showstopper.

B. Deductions from the UN and NATO approaches to Multinational Logistics

Several deductions can be made from the previous sections. Each deduction will be identified and then analysed by looking at the ramifications for future Canadian involvement in MNL.

A nation is ultimately responsible for the support to its troops. From both the UN and the NATO experience, it is clear that despite any commitments, if difficulties occur, a nation must be able to react quickly in order to provide the necessary support to its deployed troops. The overall responsibility simply cannot be given away.

Canada's participation in global operations with combat troops must be able to count on full military support. By adhering to MNL agreements, Canada may be able to overcome the downsizing of its logistics functions and hopefully be able to fulfill its support requirements with the minimum amount of troops necessary to perform all essential support functions. Yet, considering the above deduction, Canada should maintain back up plans to intervene if MNL arrangements fail.

Successful use of civilian contractors. Another interesting deduction from the UN experience now being explored by NATO, is the use of a civilian work force and contractors. The UN system relies heavily on its civilian work force and contractors for deployed missions. This is certainly the case for pacific settlements of disputes under chapter VI of the UN Charter¹⁰⁶, humanitarian type missions and, once hostilities have ceased.

Canada also embarked on this venture in 2000 by employing the ATCO Frontec company under the Contractor Support Program (CSP) to provide some of the support to its contingent in Bosnia. This was expanded with the Canadian Contractor Augmentation Program (CANCAP) arrangements signed with the SNC Lavalin/PAE consortium in November 2002.¹⁰⁷ The basic principle was that as soon as the situation in the mission area allowed it, Canada would employ the resources of CANCAP. The original concept was based on this occurring by rotation three or four of a deployment¹⁰⁸. However, despite ISAF IV's high threat environment, Canada has been using CANCAP support for this mission, primarily within camps. Canada is gaining valuable experience with CANCAP and is reducing the burden on military support troops. However, the requirement remains to keep some support troops on stand-by if the situation in theatre deteriorates and contractors have to be pulled out.

¹⁰⁶ United Nations. "Charter of the United Nations" 26 June 1945. Chapter VI. Available from <http://www.un.org/aboutun/charter/> accessed 18 March 2004.

¹⁰⁷ Richard Bray, "Side by Side," *Summit Magazine*. March 2004: 6 & 7.

¹⁰⁸ Canada normally rotates its troops in theatre every 6 months.

MNL is above all a partnership among willing nations. Except when the UN can impose the organization of a CAO¹⁰⁹, MNL arrangements are ultimately based on partnership among nations. This is certainly the case for any rapid coalition deployments, including the UN, where the support troops operate within a high threat level, as is the case for most current NATO controlled operations.

Although organizations such as the UN or NATO provide doctrine, guidelines and if the conditions are right, may even control MNL arrangements, nations should concentrate on MOUs and pre-arrangements with other like-minded nations in order to cover as many probable support scenarios as possible prior to deployments. Although they have established procedures, both NATO and UN leadership are limited in their authority to what member nations will permit. Because NATO MNL initiatives to optimize efficiencies and gain economies for participating nations have not produced tangible results¹¹⁰, it is up to member nations to take the lead and make smaller scale arrangements with other participating nations by using doctrine, guidelines, procedures and even templates for bi-lateral and multi-lateral logistics arrangements developed by NATO. This would accelerate the implementation of deployment enablers in an effective and much more efficient way, that could realise the MNL promise of economy much earlier on in the mission. For now, merely having a few key partners would set the scene for leadership by example in this area. If successfully implemented, it is likely that other nations would also adopt a multinational approach. The advantage of being in the lead of such an endeavour is that it pre-empts difficulties involving differing standards, quality of support and funding decisions. Limiting the initial pre-arrangements to a few nations also allows expansion of the scope of the logistic functions being tackled thereby providing more comprehensive gains in the areas of support as well as communications equipment interoperability and compatibility.

¹⁰⁹ Mainly in non-threatening situations under UN control.

¹¹⁰ For example in Bosnia, Kosovo and Afghanistan.

Leanness and efficiency vs robustness and depth. The lack of support specialists and equipment in most western world military forces may be the result of the past two decades of achievements in leanness and efficiency. The well intended, but flawed application of the latest industry fads has also certainly contributed to this situation. To some extent, the proper application of the “business case” approach, “total quality management”, “ISO 9000” and “business process reengineering” have yielded excellent results and challenged once sacrosanct traditions. Benchmarking logistic functions that are similar in both the civilian and military spheres has also introduced new ideas and methodologies that have resulted in savings. “Just in time delivery” and the current ready availability of contractors has provided a false sense of security and lured military leaders into accepting higher risks than good judgement would normally have allowed. The need to reap “peace dividends” after the end of the cold war also contributed to this trend. But comparisons with civilian industry have their limits when the margin for error is much slimmer as is the case for support to troops deployed in high threat areas. No one should be allowed to confuse leanness and efficiency with a need for robustness and depth. Some redundancy in support is necessary when the mission cannot fail.

The CF must take stock of its capability packages and ensure that the full spectrum of support enablers is not only available, but also tailored to the size and complexity of the coalition combat element offered. The requirements for tactical, operational and strategic level support troops cannot be oversimplified in an attempt to achieve a more attractive “tooth to tail ratio”. One must also take into consideration the time required to access some of these enablers and the fact that worldwide; many elements of these support tails have become “endangered species”.

Regional partnership arrangements. As mentioned earlier, the UN Secretary-General has encouraged nations to enter into partnership with other close neighbours.¹¹¹ This facilitates training, normally involves a closer fit on the cultural front and greatly facilitates mounting and deployment to the area of operations.

For Canada, considering the closeness and similar values, outlook on global issues in the climate of rapprochement signalled by Canada's current political leadership, support arrangements with the US are a must. If the "regional" qualifier is expanded to include common language, previous joint experience, compatibility of equipment as well as military doctrinal and procedural similarities, Canada could also find partners among the Commonwealth as well as early NATO members and ABCA¹¹² coalition members. This does not exclude any other nation willing to enter into coalitions. In order to concentrate the effort and energy needed to undertake the wide spectrum of logistics functions called for in a MNL venture, choices of partners are likely limited. In the choice of partners, history shows that Canada may not have the same interest in missions as many of the nations just mentioned, more specifically the US and Australia. We have deployed more frequently alongside the Netherlands and Denmark.

C. Minimizing risks and difficulties

The MNL concept is in essence quite logical. In the Canadian case, unless a major investment is made in support troops and the requisite equipment, MNL may be the only feasible way to support deployed combat formations for sustained rotations. The advantages previously outlined apply to the Canadian experience and should offset the risks of undertaking multinational support arrangements. However, in order to reap maximum benefit from lessons learned and to avoid potential pitfalls, the CF must have a clear strategic vision of the way ahead. It is therefore worth reviewing MNL risks and identifying how the CF can mitigate them.

¹¹¹ United Nations. *United Nations Stand-by Arrangements System Military Handbook*. Edition 2003. Military Division DPKO, 14 April 2003. 11 From: http://www.un.org/Depts/dpko/milad/fgs2/unsas_files/UNSAS accessed 4 Mar 2004.

¹¹² Although New Zealand not included in the acronym Australia, Britain, Canada and America (ABCA), she has officially adopted the ABCA doctrine and regularly participates on ABCA exercises. From "About the NZ army" from <http://www.army.mil.nz/default.asp?CHANNEL=ABOUT+NZ+ARMY&PAGE=Army+Doctrine> accessed 14 April 2004.

Assured commitment. Seeking assured commitment from all possible partners is utopian. Even the article 5 declaration of the North Atlantic Treaty¹¹³ post 11 September 2001 did not muster the expected troop deployments along side the Americans in Afghanistan or Iraq. Given Canada's history and political policy statements, it is unlikely that Canadian troops will be sent anywhere in the world unilaterally. Therefore, assuming Canadian participation only when there is a coalition, partnerships should be considered with a few like-minded nations with similar deployment histories. The successful partnership with the Netherlands and Denmark in Eritrea is but one example.¹¹⁴ Other long-standing ABCA members such as Australia, Great Britain, New-Zealand and the US, having worked with Canada on numerous exercises¹¹⁵ and sharing military doctrine, would also be highly compatible partners, however unless there is a change in foreign policy, we do not seem to share the same reasons for providing troops with this latter group. If Canada is to maintain its commitment to SHIRBRIG, she should probably lead by example by truly dedicating stand-by troops to it, or at least maintain the promised package of troops available to the UN and further contribute to MNL arrangements with key SHIRBRIG partners.

National needs. It is likely that any reciprocal pre-arrangements for mutual logistic support embarked upon by the CF with other nations could only be made to take effect if Canada participates in that particular mission with military troops, just as Canada must accept the same from other nations. Pre-arrangements need to be re-confirmed with each new mission. Nonetheless, these pre-arrangements must be developed in details to include procedures, responsibilities, liabilities and funding or financing schemes. Just like contingency plans; they serve only to save time and need to be adapted to the situation when they are activated.

¹¹³ NATO. *The North Atlantic Treaty*. Washington DC. 4 April 1949 from <http://www.nato.int/docu/basicxt/treaty.htm> accessed 14 April 2004. Article 5 of the North Atlantic Treaty stipulates that "The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that ... each of them, ... will assist the Party.

¹¹⁴ Canada. Department of National Defence. Deputy Chief of Defence Staff web site for past operations. Op Eclipse Nov 2000 – June 2001. From http://www.forces.gc.ca/site/operations/eclipse_e.asp. Accessed 14 April 2004

¹¹⁵ achieved under the ABCA

Uncertainty of replacement. Once troops are committed to a deployed coalition, the CF should assume the commitment may last for a long period. Therefore, if the CF commits to a Lead Nation role or a Role specialist type engagement, necessary assets must be made available to meet the commitment for a long period. Arrangements should be flexible enough to allow replacement of military support troops by contractors if and when the situation allows it. However, it must be clearly understood that, in order to rely on partners to accomplish other logistical functions the CF will have to meet its own commitments. The choice of function thus becomes crucial in maintaining the pool of assets necessary to fulfill the mandate for protracted operations. For example, if the CF commits to providing fresh food management, the pool of qualified cooks must cater to a large number of rotations. With the current CF strength and composition, communication, medical or engineering tasks should be avoided because current resources are insufficient to sustain multiple rotations.

However, if the Multinational Integrated Logistic Unit (MILU) model is selected, pre-arrangements can provide for rotation of functions for participating nations at particular intervals. For example, if three nations are participating in a MILU run airport, functions may be divided into:

- Nation A: providing the administrative support (kitchen, passenger terminal);
- Nation B: providing the operational elements and Command and Control (tower operations, air traffic controllers, radar and lighting etc); and
- Nation C: providing material handling and ground support.

The pre-arrangements could also specify that one nation keeps a role for a specific period of time and then assumes the next set of responsibilities. In this model, specific trades or equipment would be required for a relatively short period thus allowing for rest over two sequences before being called again. The possibility of switching to a civilian contractor, once the situation allows it, should also be embedded in the pre-arrangements.

Delay in decision-making. Delays in decision-making are likely to occur. Solid pre-arrangements with a few well-selected, like-minded nations will accelerate

implementation once the political decision is taken to send troops. To avoid further delays and missed opportunities, it is important that the support elements committed are maintained at a higher level of readiness. However the fact remains that the CF will not always be able to enter into a coalition in synchronization with chosen partners. Therefore, the capability to unilaterally support committed troops must remain.

Interoperability/unique national items. The selection of “preferred partners” with whom Canada would expand the exchange of services to the point of sharing acquisition programs could be the idealistic goal in order to increase interoperability. Concentration on SHIRBRIG where a standard is identified for key enablers, for example the communication equipment, may be another strategy to improve interoperability for the equipment. The procedural aspect of interoperability can also be improved through exercises with partners. Some items and services cannot be shared or provided by other nations. A complete review and critical evaluation to keep this list to a minimum must be completed. Based on this list, the appropriate impact on force structure and composition then has to be evaluated in order to ensure the required nucleus of National Support Element for these unique items or services is provided. Such a list could include replacing uniforms, providing financial services (if it needs to be provided forward as much more services are now provided on line) and securing rear link communications back to Canada. These factors should be included in the pre-arrangements MOU. Again, this list could probably be reduced through a common training program with the partners, which would build confidence, improve interoperability and provide more opportunities to increase the areas where sharing and exchange can occur.

Lack of logistics resources. “[T]here is no magic growth of capability by working together with other nations.”¹¹⁶ Working in a MNL arrangement with other nations will not eliminate the requirement to have our own support troops and equipment; it will only stretch our ability to sustain longer operations and improve quality of life for support troops by slowing operational tempo. However, in some specific high cost and low-

¹¹⁶ Mark A. Bellini, “Multinational Logistics; Is it worth it?” Strategy Research Project. Carlisle Barracks: US Army War College, 6 April 2000. 11

density type of services or assets such as strategic lift, a pooling of effort to secure guaranteed access or acquisition may result in savings. New requirements requiring acquisition should be evaluated with selected partners to identify savings while addressing interoperability issues.

Legal aspects. Partnering will not magically make the legal issue disappear. However, pre-arrangements may smooth the way and, if a particular area cannot be dealt with, at least it will be known in advance thus allowing appropriate adjustments to force structure and composition to be made.

Liability issues. Mitigating measures may also be pre-arranged in this area ensuring that pre-selected partners have similar levels of individual and collective training in their annual cycle. Liabilities also need to be spelled out in pre-arranged MOU to avoid future conflicts if accidents happen.

Autonomy. The CF must ultimately be ready to provide all required support to its deployed troops with any economy achieved by MNL arrangements considered a bonus. This should not be interpreted as shying away from MNL, to the contrary. Those bonuses should be actively pursued but the level of commitments of our “front troops” should not exceed what the inventory of support troops can sustain.

Standard of support. This factor can be addressed by the choice of partners and the type of support that will be accepted. Performance standards and risk tolerance in particular areas must be identified, and costs in sustained personnel and equipment should be earmarked for those areas where only national support is appropriate. Canada may even consider investing in these types of functions and volunteer to assume the lead or role specialist nation. Areas such as fresh food inspection and storage as well as health services and medical supplies such as blood may fall into this category.

Funding. The basic principle to keep in mind is that should Canada not enter into logistic partnerships, it will still have to provide all support functions and assume all

costs. The question then becomes achieving, within the simplest system possible, equity in the relative worth of services each partner provides. The aim must be to provide the best support achievable avoiding the creation of costly bureaucracies just to keep track of how much is contributed and what can be saved. Most of this can be specified in the MOU providing the possibility of revision at regular intervals. Another possible method of limiting the overhead required to evaluate the equity of the exchange of services is to adopt the MILU model mentioned earlier, where the responsibilities of specific functions rotate among the key partners. But even without this approach, the main point is not to expect exact reimbursement for every service provided to other nations. The solution remains in a detailed MOU agreed to prior to deployment and in all partners ensuring that efficiency is embedded into the system they build together.

Command and control. The key principle for Command and Control is that the support troops assigned to a MNL arrangement must react to the coalition commander's priorities. And the simplest form is to have the support troops report to him. Any restriction as to the employment of the troops or redistribution of assets should be clearly spelled out in the MOU. To increase the confidence level among partners, even if one nation assumes the bulk of the command element, the headquarters should reflect the multinational nature of the organization. As was done for the UN SHIRBRIG, the partners, upon entering the pre-arrangements, should commonly select the standard of communication hardware for in theatre communications. This allows each nation to acquire the right type and quantity of equipment required.¹¹⁷ Key appointments should be assigned according to agreed participation and regular training should occur to test the pre-arrangements, the MOU and to allow amendments where required. Several headquarter teams could thus be created to allow the rotation of the high readiness burden.

Considering the multitude of difficulties that could arise, this is another reason to carefully select and limit the number of partner nations. This would not preclude

¹¹⁷ T.Moxley (Maj) and D. Wu, (Maj), "SHIRBRIG – Overview, capabilities and issues". Briefing note from NDHQ J5 Plans and JOG HQ J5 Log. 15 Oct 2003. 8 .The UN set the standard for communication equipment (Harris RF-5811 Secure Voice and Data unit) that was then purchased by the key contributing nations. Extra suites of communications were bought and kept in reserve to accommodate late contributors that could volunteer just before a new mission.

additional nations joining the coalition later, when a mission is announced, but in such a case, they would adhere to the pre-set arrangement with limited possibilities for amendment. Bilateral and multilateral pre-arrangements with many more nations for specific types of support would still be envisaged. On this aspect, SHIRBRIG offers an excellent example of specialization where detailed procedures can be agreed in advance.

Data exchange. Aspiring to a common worldwide support information system is still considered idealistic, although the same was probably said about the Internet capabilities in the early 1970s. However, improvement can be sought in stages. Initially, any partnership should concentrate on communications between partners. This may not necessarily mean immediately changing the entire communications inventory, but some aspects should be made available for partnership as in the previously provided example of communications equipment for SHIRBRIG headquarters. Second, the information that needs to be exchanged should be identified because not all data is relevant for Commanders in the field. Formats to be used for needed information should be agreed upon. It is speculated that, by keeping information exchange to the essentials and adhering to common formats, a MNL headquarters could manage even if it received information via Internet.

Notwithstanding these initial steps, current research in the area of data exchange being conducted by major Alliances, such as NATO, as well as possible key partners, such as the US, should be kept track of and considered. The long-term goal would be for a MNL Headquarters able to access an “In Transit Visibility” system that tracks goods from depots (and eventually suppliers) to field units, while reporting on inventory levels.

Cultural change. There is no magic key to facilitating transformation or accelerating change. Adaptation is normally a long and arduous process, yet one could argue that the current status of western military forces is not far from a critical point that could accelerate change acceptance. Rapidly changing mindsets towards logistic resources pooling and developing inter-dependency may not be an easy process, but the advantages are seductive. A sure way to increase the level of confidence would be to build coalition-

training sessions among partners. This has been difficult to achieve in the recent past because of budget cuts and the fact that attention has been focused on real support to operations. But there are economical ways of achieving meaningful training to develop MNL planning and confidence building among partners.

As mentioned earlier, the majority of the risks and difficulties identified to date do not constitute “show stoppers” that would prevent engagement in some MNL ventures, but they need to be addressed in the pre-arrangements in order to safely achieve maximum economy. When agreements cannot be reached, “flags need to be raised” and efforts made to nonetheless achieve economies where possible. The cost of failed agreements must be properly identified well before final decisions and commitments from strategic level headquarters are made. “[T]he benefits of coalitions, and coalition logistics, far outweigh the challenges they pose.”¹¹⁸

D. Canadian Forces strategic direction concerning MNL

Based on the deductions from the UN and NATO experiences as well as the approaches to reduce the risks involved in multinational logistics, the following section will concentrate on a proposed way ahead at the strategic level of the National Defence Headquarter (NDHQ).

Maintaining current capability. As multinational arrangements do not take away national responsibility, the CF must maintain support offered to CF personnel and equipment, in sufficient quality and quantity, to provide all the support functions required by deployed troops. Economies should be sought through MNL to reduce the burden and provide a more efficient use of resources but nonetheless, the CF should have in its inventory enough support assets to provide the full spectrum of functions to deployed troops.

¹¹⁸ Patrick J. Dulin, (Col USMC) “Finding the friction points in coalition logistics.” *Army Logistician*, Vol 34 issue 2, Mar/Apr 2002: 12

Early in - Early out. To gain maximum recognition from the global community for participation on deployed missions, Canada should attempt to deploy early. This does not necessarily mean being first, as this normally involves specific assets to set up the theatre that we would not normally require in our inventory. Canada may also choose to wait in order to ensure the successful creation of a coalition. Even with civilian contractors and MNL arrangements, the CF cannot afford to commit to long-term missions like those in Cyprus, UNDOF and more recently, Bosnia. Certainly, plans should be made to be in early, to be replaced by our civilian contractors early and, as soon as practicable, to hand over to local authorities, which may add a logistics education/training dimension to the deployment.

Involve civilian contractors as early as practicable. The CF has already decided to involve civilian contractors as early as possible in missions even though it may prove more costly. This was done to compensate the lack of support troops. If some of the civilian labour can be hired locally, this can also contribute to a better acceptance of the military presence in the area but also contribute to the local economy and development of the region. It is certainly in line with the new Canadian approach to deployed missions, involving the “three D’s”.¹¹⁹ Nonetheless, the CF needs to keep military support troops on stand-by in the case where civilian employees should be withdrawn from the mission area.

The funding aspect of using civilian contractors in a MNL arrangement may prompt an interesting debate. There are two main opposing views on this matter: one view favours a commonly funded approach, costs being shared among the coalition or the contributing nations, the other view is that if a nation was to contribute military troops to provide for one or more of the support tasks, if she replaces the military troops by a civilian contractor, she should keep the responsibility for the associated costs. Naturally,

¹¹⁹ John McCallum. “Minister’s message on National Defence Performance Report For the period ending March 31, 2003” available from http://www.tbs-sct.gc.ca/rma/dpr/02-03/ND-DN/ND-DN03D01_e.asp accessed on 14 April 2004. The MND refers to a concerted approach involving Defence, Development (Canadian International Development Agency) and Diplomacy, called the 3 D approach..

the benefit of entering into a partnership well in advance is that these can be negotiated and entered into the MOU.

Identify possible key partners. Efforts should be made to identify suitable key partners for MNL arrangements. This is a strategic level task, as it will have an impact on numerous other areas such as training and possibly common acquisition ventures. Factors to consider in making this selection should include; similar culture, similar outlook on global issues, language, previous common experiences and shared military doctrine, and procedures. The political levels should validate chosen partners before formal discussions leading to bi/multi-lateral logistics arrangements are attempted.

Identify unique National requirements or high risks functions. The CF must identify the logistics functions that cannot be part of MNL arrangements. This can be either because of unique national requirements or because the CF wants to maintain higher standards than those offered by possible partners. Those aspects must then be staffed to ensure the services can be nationally sustained for extended periods with Canadian resources. As mentioned earlier, those possible unique requirements that need to be validated may include: combat rations, some fresh rations supplements, spare parts and specific maintenance (depending on unique equipments), some ammunition, postal services (except the actual transportation) and the care of dead. The medical services would fall into the high risks functions, where the CF would have to carefully review the standards provided by possible partners. Usually, role one is left at national level while role 2 and 3 is accepted from only a few troops contributors having similar national health systems. For the high risks functions, such as the medical support, since personnel and equipment will be deployed to fulfill the function, the CF could consider offering those services to the coalition as either the Logistics Lead Nation or Role Specialization Nation.

Identify functions for Logistics Lead Nation or Role specialist Nation. In addition to the situations described in the previous paragraph, other support functions must be examined where Canada may want to act as leader. However, these opportunities should be

carefully considered and kept to a minimum since, from UN and NATO experience, nations with these roles tend to keep them for much longer than anticipated.

If those strategic guidelines are accepted, detailed staff work could then be delegated to the Canadian Forces Joint Support Group (CF JSG), the operational level support headquarters, as this is the organization that would most likely oversee the implementation. This would involve: outlining detailed procedure for a possible Multinational Integrated Logistic Unit (MILU) and its rotation plan; proposing exercise plans and objectives; investigating common equipment requirements; and maintaining liaison with possible partner nations' operational level support organizations. It should also be noted that throughout this process, it is important not to rush partners but rather to start on a smaller scale, conduct trials and build mutual confidence.

CONCLUSION

The CF has a serious shortfall in support capabilities that affects its ability to support sustained deployed operations. Some measures such as the Canadian Contractor Augmentation Program (CANCAP), have been initiated to alleviate these difficulties, but when the mission calls for military troops, other solutions must be sought.

Considering that Canadian troops will most likely deploy in some form of coalition and the fact that the same difficulties are experienced by many of our allies, the MNL concept can offer a multitude of attractive advantages that would reduce the operational tempo and stress military engineers, medical staff and logisticians currently experience. However, MNL is not a panacea to all support problems. MNL can involve some risks and difficulties that need to be well understood prior to being undertaken. Through an analysis of the approaches taken by the UN and NATO, this paper has provided a list of measures to minimize the risks inherent to MNL, starting with the search for possible like-minded partners. It has mapped some strategic level precepts that need to be confirmed by our political and military leaders. Then it is suggested that the CF JSG work on the details of such support associations along the lines of NATO

doctrine. These should then be exercised as much as possible in preparation of future operational deployments.

Overall, MNL allows for a better use of existing scarce resources but it should not be seen as a way to further reduce support trades. MNL does not take away from the overall national responsibility for ultimately providing support to national deployed troops.

In spite of the difficulties encountered in entering into MNL, the benefits gained are worth the efforts. While the principles and procedures studied here seem sound, the concept of MNL has not yet picked up speed and, even in situations where it would have provided ideal solutions for all participants such as ISAF, only embryonic portions were implemented. It is therefore concluded that, Canada should be pro-active and achieve better success by approaching a few like-minded partners and initiating MNL arrangements.

In such a venture, strategic guidelines must be provided to ensure a conscious and cautious approach. This paper has sought to set the scene to initiate the strategic level debate that needs to take place before detailed work with partners can be undertaken.

ANNEX A – DEFINITIONS

Logistics Lead Nation

One nation assumes responsibility for providing or procuring a specific logistic capability and/or service for all or part of the multinational force within a defined geographical area for a defined period. Compensation and/or reimbursement will then be subject to agreement between parties involved. (MC 319/2)¹²⁰

Logistics

The science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations which deal with:

- a. design and development, acquisition, storage, transport, distribution, maintenance, evacuation and disposal of materiel;
- b. transport of personnel;
- c. acquisition or construction, maintenance, operation and disposition of facilities;
- d. acquisition or furnishing of services; and
- e. medical and health service support. (AAP-6 & MC 319/2)

Multinational Integrated Logistic Unit (MILU)

A MILU is formed when two or more Nations agree, under the Operational Control (OPCON) of a Force Commander at joint force or component level, to provide logistic support to a multinational force. (MC 319/2)

National Support Element

Any national organization or activity that supports national forces which are part of the NATO force. NSEs are OPCON to the national authorities, they are not normally part of the NATO force. Their mission is nation-specific support to units and common support that is retained by the nation. NSEs are asked to co-ordinate and co-operate with the NATO commander and the host nation. If the operational situation allows for a reduction, greater co-operation and centralization of services among NSEs could produce significant savings. (AJP-4)¹²¹

Logistic Role Specialization Nation

One nation assumes the responsibility for providing or procuring a specific logistic capability and/or service for all or part of the multinational force within a defined geographical area for a defined period. Compensation and/or reimbursement will then be subject to agreement between the parties involved. (MC 319/2)

¹²⁰ NATO. *NATO Principles and Policies for Logistics*, MC 319/2, Brussels, Belgium. 26 September 2003.

¹²¹ NATO. “Allied Joint Logistic Doctrine AJP 4” as promulgated by STANAG 2128. July 1999. from <http://www.nato.int/docu/stanag/ajp4/ajp-4.pdf> accessed 24 march 2004.

Support

The action of a force, or portion thereof, which aids, protects, complements, or sustains any other force. (AAP-6)

ANNEX B – SUMMARY OF CORDA STUDY IN SFOR AND KFOR¹²²

Summary of Results

The results of this study indicate there are significant savings to be made by nations working together multinationally. This table gives an indication of possible savings for each functional area.

Functional Area	Potential Multinational Saving
Sea Port of Debarkation (SPOD) Activities	26%
Reception and Staging	Up to 45% on average assuming personnel in Kosovo
Military Police Company	9% – 26%
Transport and Movement Coordination Centre	>25% (+ savings in distance travelled)
Fuel Distribution	> 20%

Summary of Potential Multinational Savings

¹²² Suzanne Griffin, “Project: Logistical Planning. Task SX – A Cost Benefit Analysis Study of NATO Multinational Logistics in the Balkans” Summary Report. CORDA ref: CR1185/MR1/3, CORDA Limited,

Bibliography

- Bellini, Mark A. (Lcol). "Multinational Logistics; Is it worth it?" Strategy Research Project. Carlisle Barracks: US Army War College, 6 April 2000. 29p.
- Beno, Ernest B. (Bgen Ret) and John D. Joly (Col Ret). *Sustainment Capabilities for the Army of the Future*. Directorate of Land Strategic Concepts Research Note 001, Kingston, 20 March 2002 110 p.
- Bettinger, Keith Andrew. "When the wheels fall off". Asia Times Online co. 13 Feb 2004 from www.atimes.com/atimes/middle_east/FB13AK01.html accessed on 11 March 2004
- Bland, Douglas. *The Administration of Defence Policy in Canada 1947 to 1985*, Kingston: R.P. Frye Co., 1987.
- Bray, Richard. "Side by Side," *Summit Magazine*. March 2004: 6-8.
- Canada. Department of National Defence. *1985-1986 Report on Plans and Priorities, Part III Estimates*. Ottawa: Supply and Services Canada, 1985.
- Canada. Department of National Defence. Deputy Chief of Defence Staff web site for past operations. From http://www.forces.gc.ca/site/operations/eclipse_e.asp. Accessed 14 April 2004.
- Canada. Department of National Defence. The Standing Committee on National Defence and Veterans Affairs – The quality of Life in the Canadian Forces. http://www.dnd.ca/hr/scondva/engraph/home_e.asp accessed on 14 April 2004
- Canada. Department of National Defence. *The origins and status of SHIRBRIG*, Assistant Deputy Minister (Public Affairs)/ ADM(PA). BG-99.033a. 21 September 2000. available from http://www.dnd.ca/site/newsroom/view_news_e.asp?id=180 accessed 16 Feb 2004.
- Canada. Governor General. *Speech from the Throne to Open the Third Session of the Thirty-Seventh Parliament of Canada*. Ottawa ISBN 0-662-67926. 2 Feb 2004. available from http://www.pm.gc.ca/grfx/docs/sft_fe2004_e.pdf accessed 16 Feb 2004.
- Canada. *The New NATO and the Evolution of Peacekeeping: Implications for Canada*. Report of the Standing Senate Committee on Foreign Affairs, April 2000. From <http://www.parl.gc.ca/36/2/parlbus/commbus/senate/Com-e/FORE-E/REP-E/rep07apr00part1-e.htm#Chapter%20IV:%20The%20New%20NATO%20%E2%80%93%20Legal%20Issues> accessed 18 March 2004.

- Canadian Press. "Stretched thin' troops will go to Haiti." *Toronto Star*, 1 March 2004, 07:30 PM. Available from:
http://www.thestar.com/NASApp/cs/ContentServer?pagename=thestar/Layout/Article_Type1&c=Article&cid=1078182092751&call_pageid=968332188492&col=968793972154 accessed 17 March 2004.
- Delvoie, Louis A. Canada and International Security operations: The search for policy rationales". *Canada and the New World Order; Facing the New Millenium*, Toronto, Irwin Publishing Inc 2000 p.30
- De Sauville de Lapresle, Bertrand (Gen). "Assembling a Multinational Force." *RUSI Journal*, Dec 1997:18-21.
- Dillenberg, Michael (Capt(N)). "Multinational Logistics, Promoting use in Force Planning and PARP processes". Presentation made at the Senior NATO Logistician Conference (SNLC). Brussels, 22-23 April 2002.
- Dulin, Patrick J. (Col USMC) "Finding the friction points in coalition logistics." *Army Logistician*, Vol 34 issue 2, Mar/Apr 2002: 8-16.
- Durgal, E. (Lcol TUA). "Logistics in International Security Assistance Force (IASF II)", Power point slides presented at the Logistics Coordination Board, NATO 21 November 2002.
- Eagles D. (Lcol),A. Brokke (Cdr), P. Buades, C. Rebello (Capt) and J. O'Loughlin. *Multinational logistics & Contractorisation Integrated Project Team Study* SHAPE, Mons, Fall 2002.
- Farmen, William N. "Ad Hoc Logistics in Bosnia". *Joint Force Quarterly*, Autumn/Winter 1999-2000: 36-42
- Farmen, William N. "Wanted: a NATO Logistics Headquarters". *Joint Force Quarterly*, Spring 1998: 62-66
- Fontaine, Yves J. "Strategic Logistics for Intervention Forces" *Parameters*, Winter 1997/1998: 42-59.
- Germany. "Multinational Log Solutions from a nation's perspective" Power Point presentation prepared by Germany Joint Service support staff II. NATO Senior Logistics Conference (SNLC), Brussels Oct 2001.
- Goetze, Bernd A (Dr). "NATO and the defence Capabilities initiative." *The Atlantic Council of Canada*. Paper 1/01. Toronto. Spring 2000. available from
www.atlantic-council.ca/B.%20Goetze%20paper.PDF accessed 3 Feb 2004.

- Gorman, Frank. "Issues 2000 Multinational Logistics: Managing Diversity." *Air Force Journal of Logistics*, 24, Fall 2000: 8-15, 40.
- Gregory, Christopher. "Evolution of NATO multinational logistics doctrine: the link between funding and logistics." *Navy Supply Corps Newsletter*, Vol 62 Issue 4, Jul/Aug 99:10.
- Griffin, Suzanne. "Project: Logistical Planning. Task SX – A Cost Benefit Analysis Study of NATO Multinational Logistics in the Balkans" Summary Report. CORDA ref: CR1185/MR1/3, CORDA Limited, New Malden Surrey, 24 May 2001.
- Hobson, R.M. (Col UK). "Multinational Logistic Support to ISAF – The Lessons" PJHQ briefing (Power Point slides) at the Senior NATO Logistic Conference (SNLC) Oct 2002.
- Koring, Paul. "NATO mission in Afghanistan exposes chink in bloc's armour," *Globe and Mail*, 15 April 2004, A-16. From <http://www.theglobeandmail.com/servlet/ArticleNews/TPStory/LAC/20040415/NATO15/TPInternational/Asia> accessed on 15 April 2004.
- Lashkevitch, Larry (Bgen) and Frank Bognar (Maj). "Multinational Logistics – The Canadian Experience". Presentation made at the Senior NATO Logistician Conference (SNLC). Brussels, 22-23 April 2002.
- Maudlin, Michael C., "Multinational Logistics", *Army Logistician*; May/June 2001; p. 38
- McCallum, John. "John McCallum Speaks to the Royal Institute of International Affairs" 3 Dec 2003. accessed from http://www.forces.gc.ca/site/newsroom/view_news_e.asp?id=1276 accessed 23 March 2004.
- McCallum, John. "Minister's message on National Defence Performance Report For the period ending March 31, 2003" available from http://www.tbs-sct.gc.ca/rma/dpr/02-03/ND-DN/ND-DN03D01_e.asp accessed 14 April 2004.
- McKay, Robert. "Transformation in Army Logistics" *Military Review*, Sep/Oct 2000: 44-50.
- Miles, P.M. (Gp Capt UKAF). "Multinationality in Logistics: a strategic overview report", Power Point slides presented at the Logistic Coordination Board, NATO, 21 Nov 2002.
- Moore, David M, and Antill, Peter D. "British Army Logistics and Contractors on the Battlefield." *RUSI Journal*, Oct 2000: 46-52.

- Moxley, T (Maj) and Wu, D. (Maj), “Shirbrig – Overview, capabilities and issues”. Briefing note from NDHQ J5 Plans and JOG HQ J5 Log. 15 Oct 2003. 11 p.
- Natsios, Andrew S. “NGOs and the UN System in complex Humanitarian Emergencies: Conflict or Cooperation?” *Third World Quarterly*, Vol 16, No 3, Sept 1995.
- NATO. Airborne Early Warning and Control Force E-3 web site at <http://www.e3a.nato.int/info/default.htm> accessed 17 march 2004
- NATO. “About NAMSA” The NATO Maintenance and Supply Agency web site at http://www.namsa.nato.int/about/about_e.htm accessed 24 March 2004
- NATO. *Allied Joint Logistic Doctrine AJP 4* as promulgated by STANAG 2128. July 1999. from <http://www.nato.int/docu/stanag/ajp4/ajp-4.pdf> accessed 24 march 2004.
- NATO. “Allied Joint Host Nation Support Doctrine and Procedures AJP 4-5” Sept 2001. From <http://www.nato.int/docu/stanag/ajp45/ajp45.pdf> accessed 26 May 2004.
- NATO. *Multinational Joint Logistic Centre (MJLC) Doctrine AJP 4-6(A)* Final draft as of 1 May 2002.
- NATO. *Modes of Multinational Logistic Support*. AJP 4.9, Ratification Draft. Dec 2002.
- NATO. *NATO Logistics Handbook*, Senior NATO Logisticians Conference. Brussels, Belgium. 3rd edition October 1997 from; <http://www.nato.int/docu/logi-en/logist97.htm> accessed 17 march 2004
- NATO. *NATO Principles and Policies for Logistics*, MC 319/2, Brussels, Belgium. 26 September 2003.
- NATO. *NATO Today, Building better security and stability for all*. Brochure from NATO Office of Information and Press. Brussels, 2002, 40p.
- NATO. *The NATO Handbook, 50th Anniversary edition*. Office of Information and Press, Brussels, Belgium. 1998-1999 ISBN 92-845-0134-2. from <http://www.nato.int/docu/handbook/1998/handbook.pdf> accessed 17 march 2004.
- NATO. *The North Atlantic Treaty*. Washington DC. 4 April 1949 from <http://www.nato.int/docu/basicxtxt/treaty.htm> accessed 14 April 2004.
- New Zealand. From “ About the NZ army” from <http://www.army.mil.nz/default.asp?CHANNEL=ABOUT+NZ+ARMY&PAGE=Army+Doctrine> accessed 14 April 2004.

- Paulus, Robert D. "Implementing Focused Logistics" *Army Logistician*, Vol 35 issue 6, Nov/Dec 2003. p.2.
- Pratt, David, "Defence Minister speaks at 20th annual CDAI Seminar" 26 Feb 2004. Available from http://www.forces.gc.ca/site/newsroom/view_news_e.asp?id=1312 accessed 17 March 2004.
- Quadripartite Advisory Publication (QAP). *Coalition Logistics Handbook*. Number 323 ed 1. 1 June 2003
- Quadripartite Standardization Agreement (QSTAG), *Coalition Logistics Planning Guide*. Number 2020 Edition 1, a9 Jan 2000
- Quick, Hubert L. Jr. (Lcol US Army). "Multinational Logistics: a CINC'S tools for Implementation" Strategy Research Project. Carlisle Barracks: US Army War College, 19 Jan 1996, 27p.
- Shraeder, Charles R. "Logistics in Peace Operations and Humanitarian assistance" Parameters, Summer1996, xxvi, no 2.
- Smith, D.H. (Bgen). "Common Logistics – A NATO Commander's Dream" NATO's Sixteen Nations 35, June 1990: 37-43.
- Spidel, Robert J. "Multinational Logistics in NATO: Will it work?" Strategy Research Project. Carlisle Barracks: US Army War College, 15 April 1996. 29. (AD-A308-602)
- Szayna, Thomas S and others, *Improving Army Planning for Future Multinational Coalition Operations*. RAND's Arroyo Center, Army Research Division, ISBN: 0-83330-2960-6, MR-1291-A, 2001. Available from <http://www.rand.org/publications/MR/MR1291> 22 Jan 2004
- Thompson, Julian. *The Lifeblood of War. Logistics in Armed Conflict*. London, UK. Brassey's. 1991.
- United Nations. "Charter of the United Nations" 26 June 1945. Available from <http://www.un.org/aboutun/charter/> accessed 18 March 2004.
- United Nations, Department of Peacekeeping Operations, *Directive for the Force Commander of the United Nations Mission to Ethiopia and Eritrea UNMEE*, New York, MPS/6036(FC) Draft of 30 Oct 2000. 16p.
- United Nations, Department of Peacekeeping Operations, A note on the United Nations Logistics base. From <http://www.un.org/Depts/dpko/dpko/intro/base.htm> accessed on 18 March 2004.

United Nations, Manual on Policies and Procedures concerning reimbursement and control of contingent-owned equipment of troop-contributors participating in Peacekeeping missions (COE Manual), UNNY ref: FMSS/DPK/13032 dated 16 April 2002. 2-1.

United Nations. Shirbrig. *Memorandum of Understanding (MOU) concerning Operations, funding, Administration and Status of the Multinational United Nations stand-By High Readiness Brigade*. Available from <http://www.shirbrig.dk/shirbrig/documents/MOU%20SB.pdf> 4 March 2004. 8p.

United Nations. *United Nations Disengagement Observer Force*. Web page at <http://www.un.org/Depts/dpko/missions/undof/> accessed 17 March 2004.

United Nations. *United Nations Stand-by Arrangements System Military Handbook*. Edition 2003. Military Division DPKO, 14 April 2003. From: http://www.un.org/Depts/dpko/milad/fgs2/unsas_files/UNSAS accessed 4 Mar 2004

United States. Department of Defense. *Report to Congress on Kosovo/Operation Allied Force After-Action Report*. Washington, January 31, 2002. from <http://www.defenselink.mil/pubs/kaar02072000.pdf> accessed 2 Feb 2004.

United States. Department of the Army. FM100-23 Peace Operations. Wahington, DC 30 December 1994 From http://www.globalsecurity.org/military/library/policy/army/fm/100-23/fm100_6.htm accessed 17 March 2004

Walsh, Mark, R. (Col) "Managing Peace Operations in the Field" *Parameters*, Summer 1996: 32-49.

Wu, D.A. "Post-Conference Report UN SHIRBRIG commander's conference held in Helsinki, Finland, 12-19 Nov 03", 1000-1(J5 Log) Kingston, JOG HQ, 25 Nov 2003.

Zamparelli, Steven J. "Contractors on the Battlefield: what have we signed up for?" Air War College, Maxwell Air Force Base, March 1999

Zanini, Michele and Jennifer Morrison Taw. *The Army and Multinational Force Compatibility*. RAND's Arroyo Center, Army Research Division, ISBN:0-8330-2793-X, MR-1145-A, 2000. Available from <http://www.rand.org/publications/MR/MR1154> 22 Jan 2004.