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CONTRACTED MAINTENANCE SUPPORT AND CANADA: PROBLEM OR PANACEA?

Major M.D. Fitz-Gerald

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Contracted Maintenance Support and Canada: Problem or Panacea?

By Major M.D. Fitz-Gerald

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ABSTRACT

This paper examines the use of contracted maintenance support by the Canadian Forces and argues that maintenance contractors are here to stay and need to be managed accordingly. The utilization of contractors by militaries has a long history, but a particular set of circumstance: the end of the Cold War, demographics and the rapid escalation of technology have given rise to the current breed of military contractors and the associated sub genre, maintenance contractors. An examination of these factors will provide clarity as to why contractors in the military are now so pervasive, and how Canada, the United States, and United Kingdom began to contract out the maintenance support of various types of equipment. When this is coupled with a brief history of the use of contractors by two of Canada's main allies, the United States and the United Kingdom, it will demonstrate that the changes that Canada is experiencing are not unique, and will not disappear any time soon. As well, the experiences of the United States and the United Kingdom provide a series of buyer beware issues that Canada needs to be cognizant of as it moves deeper into maintenance contracting. Finally, some thoughts are offered on some of the issues that deserve further study or regulation in order to allow Canada to fully embrace maintenance contractors in a way that supports operations without impediments.

GLOSSARY

ADM Mat – Assistant Deputy Minister of Materiel (Canada)

APC – Armoured Personnel Carrier

APV – Armoured Personnel Vehicle (RG 31 Nyala)

ATV – All Terrain Vehicle

B1-B – Lancer Strategic Bomber (US)

B2 – Spirit Stealth Strategic Bomber (US)

B52 - Stratofortress Strategic Bomber (US)

BQS - Better Quality Services

C4ISR - Command, Control, Communications, Computers, Intelligence, Surveillance and
Reconnaissance

CANCAP – Canadian Contractor Augmentation Program

CBO – Congressional Budget Office

CEFCOM – Canadian Expeditionary Force Command

CF – Canadian Forces

CFC – Canadian Forces College

CFD - Chief of Force Development (Canada)

CFTS - Contracted Flying and Training Support Program

CMP – Chief Military Personnel (Canada)

CFM – Cost Factors Manual (Canada)

COB – Contractors on the Battlefield (US)

CONDO - Contractors on Deployed Operations (UK)

CRS - Chief Review Staff (Canada)

CS – Combat Support

CSS – Combat Service Support

DELEGAT – Delegation of Accountability and Authority Trial

DLO - Defence Logistics Organization (UK)

DND – Department of National Defence (Canada)

DoD – Department of Defence (US)

EME - Electrical and Mechanical Engineers

F16 – Fighting Falcon Aircraft (US)

FEBA – Forward Edge of the Battle Area

FRP – Force Reduction Program

FSR – Factory Service Representative

GAO – General Accounting Office (US)

HNS – Host Nation Support

ISS – In Service Support

ISSC – In Service Support Contractor

JSF - Joint Strike Fighter

JSTARS - Joint Surveillance Target Attack Radar System

LAV – Light Armoured Vehicle (Canada)

LAV III – Third Generation Light Armoured Vehicle (Canada)

LOGCAP – Logistics Civil Augmentation Program (US)

LOGCAS – Logistics Contractor Augmentation Support (Canada)

M1 – Abrams Main Battle Tank (US)

M60 – Patton Main Battle Tank (US)

M113 – Tracked Armoured Personnel Carrier (US and Canada)

MBT – Main Battle Tank

MCCRT – Management Command and Control Re-engineering Team

MCDV – Maritime Coastal Defence Vessel (Canada)

MCpl – Master Corporal

MGen – Major General

MoD – Ministry of Defence (United Kingdom)

NATO – North Atlantic Treaty Organization

NCW - Network Centric Warfare

NDHQ – National Defence Headquarters (Canada)

NFTC - NATO Flying Training in Canada

NPM – New Public Management (UK)

OEM – Original Equipment Manufacturer

PMC – Private Military Company

PPP - Public Private Partnership

PWGSC - Public Works and Government Services Canada

RMA – Revolution in Military Affairs

SAR – Search and Rescue

SBCT - Stryker Brigade Combat Team

SCP – Standard Commercial Pattern

SMP – Standard Military Pattern

SOFA – Status of Forces Agreement

UAV – Unmanned Aerial Vehicle

UN – United Nations

Veh Tech – Vehicle Technician

Y2K – Year 2000

CHAPTER 1 – INTRODUCTION

“This isn’t your father’s army anymore”¹

The depth of this brief sentence encompasses the enormity of the change that has engulfed militaries around the world since the end of the Cold War. This succinct comment describes a fundamental shift in the way that western militaries in particular are now supported. In our father’s day, the militaries of Canada, the United States (US), and United Kingdom (UK) were primarily self-contained, self-maintained entities. In the last twenty-five years, however, there has been a concerted movement away from the uniformed soldier providing maintenance support to civilian contractors.

The end of the Cold War was supposed to bring about peace and prosperity. The unfortunate reality is that in the intervening years since the end of the Cold War, peace did not break out. Rather than being confronted with a major conflict between superpowers, the world has been faced with numerous complicated regional conflicts and insurgencies. Instead of the world beating guns into plows, war, and the equipment used to wage war and peace, have become increasingly complicated as well. In response to the ever more complex security situation, the US, UK, and Canadian militaries moved away from their static Cold War stances, and began to frequently deploy in order to keep the peace, make the peace, prevent genocides. With the ever-rising number of

¹ Phillip Sibley, senior LAR, Army Communications-Electronics Command (CECOMD), Fort Monouth New Jersey, 2005 cited in Aldrete, Gregory, “Nonstandard Logistics Sustainment in the Stryker Brigade Combat Teams”. *Army Logistician*, 37, no 2. (Mar-Apr 2005).

deployments, the need to supply and maintain these forces in multiple environments and locations increased, and thus the rise of the deployed contractor began.

As the US, UK, and Canadian militaries were dealing with the problems involved with their ever-increasing number of deployments, they were also faced with rapid advances in technology. The changes in technology not only impacted how war was fought, but how it was supported as well. Starting with the introduction of the M1 tank in 1982, the US was faced with having commercial maintenance contractors becoming integrated within the force structure of tactical units. In the intervening years, the US embarked upon a course that fully embraces the Revolution in Military Affairs (RMA). The RMA brought with it enormous changes to the US Military that are so inclusive that they can be viewed as the US method of transformation as, "...it requires new organizational doctrines for effective force projection and fighting."² With those leaps in technology that have accompanied the RMA, the reliance upon maintenance contractors has grown in the countries that are pursuing interoperability with the US.

Canada has not mirrored the US model for contracted maintenance support. It is important to examine the US as it is a guide to the changes that occur with technology. The US approach is highly influenced by the RMA and the very high levels of technology that have accompanied it. With the movement to highly advanced weapons platforms, the US has found that the need for operators has decreased but maintenance personnel has increased. Like Canada and the UK, the US is faced with a lack of

² Barry Cooper, Mercedes Stephenson and Ray Szeto. *Canada's Military Posture An Analysis of Recent Civilian Reports*. Report Prepared for The Fraser Institute. Vancouver: The Fraser Institute January 2004. pg 4.

maintenance personnel, and is heavily reliant upon the Original Equipment Manufacturers (OEM) and maintenance contractors to keep their equipment serviceable. Unlike Canada, there is little resistance to this trend in the US where there is a growing awareness of the implications of relying upon maintenance contractors.

The UK falls between the baby steps of Canada and the full fledged reliance of the US when it comes to contracted maintenance support. It is clear in the literature that the UK has chosen to outsource as much of their support as possible. The UK government feels that the private sector is more efficient than the public sector, and that the Ministry of Defence (MoD) should be a service support decider instead of a provider. In other words, the MoD should determine who provides the maintenance support instead of being the one that provides it. When the UK government perspective is looked at alongside the UK military's movement towards the same high tech weapons platforms utilized by the US; the reliance upon contracted maintenance support in the UK is well underway. The UK military is larger than the Canadian military, but it is of interest as the UK is not as far down the path of high tech as the US is.

Maintenance contractors are a sub-set of military contractors, but form a critical linchpin in the support package. The movement to contracted maintenance support did not happen overnight; it occurred slowly as a result of demographic pressures, changes in technology, and government policy. Contracted maintenance occurs in various degrees in western militaries, however the emphasis of this paper is on an examination of contracted maintenance support for the Canadian military. For Canada the issue is one of

size and remaining on the same path as its key allies. In a military that is relatively small, there is very little room for error, particularly on deployed operations so where the support comes from is crucial. An issue to be noted, as the Auditor General of Canada criticized the military over its lack of support to operational equipment.³ In order to examine the route the Canadian military is following, it is necessary to compare and contrast it with allies that are pursuing similar courses. The movement to contracted maintenance support seen in Canada is similar to those in the US and the UK, if not to the same breadth and scope.

An examination of the situation in the UK and the US will provide a series of buyer beware lessons for Canada. As Canada increasingly moves towards contracted maintenance support, both at home and deployed, it needs to move with care. One of the issues that the Canadian military must be wary of is, how far down the road to contracting should military go? At what point does the drive to contracting begin to affect the operational effectiveness of the military, particularly in deployed operations? The size of the Canadian military and its equipment holdings leave little room for error. Maintenance contractors do not operate under the same ethos as the military, and what is more, they have the ability to withhold their services, contract or not. Because of issues like these, Canada needs to carefully heed what is going on in the US and UK in order to avoid any pitfalls.

³ Office of the Auditor General of Canada. *2001 Report of the Auditor General* (Ottawa: Auditor General of Canada, 2001); pg 30.

The demographic changes in Canadian society and the Canadian Military since the end of the Cold War in combination with rapid increases in technology and the government cutbacks in the 1990s have manifested themselves in the way that military operations are supported. The tradition of the self-sufficient, self-maintained Canadian military is gone, and has been replaced with a combination of military and contracted technicians. As the Canadian military moves forward, contracted maintenance support is now, and will remain, a necessary element of the forces which requires careful management.

CHAPTER 2 - HOW DID THIS HAPPEN?

Contractors in support of military operations can trace their roots back to antiquity and the armies of Phillip of Macedon and others. These contractors performed vital services, but for the most part, less the mercenaries, were on the periphery of operations. Since the end of the Cold War and the Gulf War I, contractors have increased both in numbers and scope of their operations to the point where some analysts, such as Fortner, are now saying that, "... contractors are not replacing force structure, they are becoming force structure"⁴. Similarly, Campbell noted that, "The use of contractors to support military operations is no longer a nice to have. Their support is no longer an adjunct, ad hoc add-on to supplement a capability. Contractor support is an essential, vital part of our force projection capability--and increasing in its importance."⁵ A critical sub component of these contractors is the maintenance contractor. Contractors provide a laundry list of services to deployed military forces, however, it is the maintenance contractor that keeps an ever increasing amount of their vital equipment serviceable.

The move by western militaries to have contractors provide deployed combat and Combat Service Support (CSS) has its roots in the end of the Cold War. Their use did not occur overnight but resulted from a number of factors that gradually eroded the traditional military support system. While numerous reasons can be put forward as to

⁴ Joe Fortner, Doctrine Division USACASCOM, Army Doctrine WORKING Group Conference, 21 January 2008.

⁵ G.L. Campbell, "Contractors on the Battlefield: The Ethics of Paying Civilians to Enter Harm's Way and Requiring Soldiers to Depend on Them." Paper presented at the Joint Services Conference on Professional Ethics, Springfield VA. January 2000, 1.

the genesis of this migration away from established military support, perhaps the three most important factors are the following:

1. The end of the Cold War;
2. The increasing complexity of weapons systems; and
3. Demographics.

From the end of World War II, the traditional view of a potential war saw the two superpowers and their allies engaging in an all out conflict in Europe. That scenario was so entrenched that various western military planners designed their force structures accordingly. Due to the nature of the presumed conflict, these forces included a full complement of Combat Support (CS) and CSS units. In other words, the structure of the forces was driven by the requirement to counter the size and structure of the opposing forces.

While there were numerous conflicts during the Cold War, none of these directly involved the superpowers fighting each other; for the most part they were proxy wars. The superpowers ensured that the proxy wars and regional conflicts were kept under control by maintaining strict controls on their proxies. The result was that the size and structure of the major militaries remained relatively static with a certain amount of deviation based on the development of new weapons systems and capabilities.

The end of the Cold War coincided with the global recession of the early 1990s, and these events were major factors in the calls for the Peace Dividend. The Peace

Dividend was a slogan championed by United States President George H.W. Bush and United Kingdom Prime Minister Margaret Thatcher. It was a term that was used to describe the economic benefits of major cuts in military spending. The expectation of the time was that peace would reign and that the subsequent downsizing and budget reductions imposed upon the militaries would reap a major Peace Dividend. The savings accrued by the decreases in military manning would be further enhanced by smaller quantities of the equipment needed to support those armies. Consequently this would lead to fewer support and maintenance technicians needed to maintain the equipment.

In the aftermath of the Cold War, the Peace Dividend made sense as the superpowers were not going to fight a major war. There would be no need to keep the massive armies that had dominated the military landscape since the end of World War II. In the fallout of the Peace Dividend, former US Secretary of Defence John Deutch, introduced the 'core capability' concept. According to this concept the military would slim down and only those essential war-fighting capabilities would be kept.⁶ If the person, organization, or capability were not organic to the core capability, it was discarded or privatized as a cost cutting measure. The concept was popular and adopted by the US, UK and Canadian militaries.

The three militaries examined in this paper have struggled with the manning of their CSS personnel since the implementation of the Peace Dividend. In part this has to do with the changing demography of the Western World. Since the fall of the wall, and

⁶ Armin Krishnan, *War as Business: Technological Change and Military Service Contracting*. (Aldershot United Kingdom: Ashgate Publishing Limited, 2008), 108.

particularly in the years between 1992 and 2002, the numbers of military personnel in the world have dropped from 26 million to 20.5 million.⁷ One of the variety of reasons for the drop is that there is no easily identifiable enemy. The traditional populations that the military drew the majority of their recruits from have fallen. In 2002, the birthrate in Canada was 25 percent lower than it had been in the previous years.⁸ Coupled with the declining birth rate, a career in the military used to be desirable when it was a fairly static occupation, but is no longer viewed as a career of choice. The protracted periods away from home, service in dangerous areas of the world and the strains on family life have all combined to impact recruiting. Military recruiters are facing stiff competition from civilian companies for choice recruits, and have resorted to lowering standards to entice new soldiers. The loss of recruits is problematic in the ranks of the combat soldiers but the trend is exacerbated in the technical trades where the maintenance personnel reside.

The expense of training and retaining technical personnel is also impacting the personnel choices made by the military. Technicians, once brought on board, become a long term financial commitment to governments and the possibility of saving scarce funds by using contracted maintenance personnel is an attractive lure for governments.

The reality of the post Cold War period is that wars erupted all over the planet after the withdrawal of support to the proxies. Civil wars, insurgencies, religious and

⁷ Bonn International Center for Conversion (BICC). *Conversion Survey 2004: Global Disarmament, Demilitarization and Demobilization*. (Baden-Baden: Nomos Verlagsgesellschaft, 2004), 21.

⁸ CTV.Ca News Staff, "Canada's birth rate falls to record low: StatsCan," available from http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/1082386025485_10/; Internet: accessed 18 November 2009.

ethnic conflicts abounded in those countries freed of restraint. It must be noted that not all of the conflicts were due to the removal of the superpower constraints. Instead of being able to pull back, the various western armies were repeatedly thrust into various theatres. In the climate of détente between NATO and the post Cold War Soviet Union combined with a lack of deterrence, the Peace Dividend did not materialize.

Subsequently, militaries around the world that had cut back their forces in the late 1980s and early 1990s began to rebuild what they had lost. The problem they faced was that the budgets were not there and the personnel had moved on.

2.1 - The United States Background

With the advent of the core capability, force planners examined their militaries against various threat scenarios, and decided upon the new size and structure. In the US, the major assumption, as directed by the Clinton Administration, was that, “Instead of a global war against another superpower and its allies, strategic planning ... called for preparations against two nearly simultaneous regional conflicts...”⁹ The wars were envisioned to be shorter and subsequently the force requirements were smaller. The experience of Desert Storm seemed to confirm this view of future conflicts; short, violent, and limited.¹⁰ The US Army radically changed the structure of its forces in order to adapt to this new strategic environment or planning assumptions.

The Peace Dividend saw the US Army draw its forces down from 18 to 10 active divisions while the National Guard was reduced to 15 Enhanced Brigades and eight Divisions.¹¹ While the active formations still needed full service support, the guard units had their roles dramatically reduced and they were moved to the strategic reserve.¹² The Enhanced Brigades were given partial CS and CSS, but the Divisions received none. In order to get down to those numbers, the brunt of the manpower cuts came from the support trades. It was recognized in a Congressional Budget Office (CBO) document

⁹ Mark Cancian, Contractors: The New Element of Military Force Structure. *Parameters*, 38, no 3. (Autumn 2008): 67-68.

¹⁰ *Ibid.*, 68.

¹¹ *Ibid.*, 68.

¹² Frances Lusser, and JoAnn Vines. *An Analysis of the Army's Force Structure: Summary*, (A memorandum prepared for the Congressional Budget Office, Washington D.C., April 1997), 6-8.

that plans would entail risk to the army due to the lack of support and that the army may have to rely on contractors or Host Nation Support (HNS).¹³

With the draw down of the US military at the end of the Cold War, a great deal of equipment was retired from service. In addition, numerous large-scale contracts were also cancelled once there was no longer a need to equip the larger US army. The second impact on the defence industry, particularly in the US, was the RMA and the movement away from large numbers of platforms to network centric warfare. The loss of contracts forced the various defence companies to start to restructure, downsize, and merge with each other. The industry that emerged after a turbulent period was much leaner and focused. Gone were the projects that were personnel intensive and the new era ushered in the high tech computer driven platforms. The number of defence manufacturers in North America and Europe in 1990 was sixty-one companies; by the time the consolidation was over they were down to thirty-one.¹⁴ The conjunction of the RMA and the end of the Cold War radically altered the defence industry landscape and forced the industry into a new direction for survival, high tech equipment, and the accompanying services contract. It was the introduction of the M1 tank that showed the defence industry a new way; the higher the technology, the greater their involvement after the initial sale.

¹³ Ibid., 13.

¹⁴ P.J. Dombrowski et al, *Military Transformation and the Defence Industry After Next the Defense Industrial Implications of Network Centric Warfare*, (Newport: Naval War College Press, 2003), pg. 22.

Historically, upon the fielding of new equipment to the US Army, the role of the OEM was to provide spare parts and initial training for the technical support personnel. That traditional arrangement had to change with the introduction of the M1. For the first time, the OEM became integrally involved in its day-to-day maintenance. While not the first instance of contractor technical support in the military, it was the first instance of contracted technicians being directly placed in support units that operated closely to the Forward Edge of the Battle Area (FEBA). Also, the introduction of the M1 was the first instance in which the plan was to continue to use contractors instead of training integral support technicians to handle the repair function.

The M1 Main Battle Tank (MBT) replaced the older M60 MBT in 1982, but the difference was that the M60's systems were mechanical based, and the M1 relied upon computers. While the M1 proved easier to operate than the M60, the real problem was that it was so complex that individual parts could no longer be changed by the crew or the maintainer as the tank had moved to the black box system.¹⁵ In the black box system, the maintenance personnel no longer had the ability to diagnose and repair individual parts or components; they merely swapped out black boxes which were then sent back to the OEM for repair. The introduction of the M1 was a radical change in equipment that in turn forced structural changes to the armoured units' organization. Initially, the integral maintenance technicians at the squadron level were removed and were centralized at the battalion level.¹⁶ Even this reorganization of the units was inadequate to support the complexity of the tanks, so a new system of support had to be found.

¹⁵ Krishnan, 18.

¹⁶ Ibid., 18.

With the introduction of increasingly complex vehicle and weapons fleets, an issue arose: the dearth of technicians. The answer to the problem laid in the introduction of contractors in the form of In Service Support (ISS) contracts. As Demchak wrote, "...the use of contractors was integral to the introduction of the M1 into units."¹⁷ The introduction of the M1 to the US Army was at the forefront of a technical RMA. In the US system, this meant a greater reliance upon high tech weapons systems that decreased operator involvement and increased the new concept of network centric warfare. Singer quotes an unknown analyst: "We're using the most advanced technology in the history of the world to wage wars and sometimes the people who built it are the only ones who know how to fix it."¹⁸ As can be seen in the example of the M1 and the comments by Singer, the movement to high tech also had corollary effects upon the organization of the military and its technicians. The contracted maintainer had arrived and looked to be here to stay.

It is an interesting paradox that as the US military increasingly moved towards advanced equipment and weaponry that its need for operators declined as its need for technicians rose. The classic US example of this is the progression in bomber aircraft from the B52 through the B-1B to the B2. The B52 entered service in the Vietnam era with a crew of five and was primarily military maintained. The B-1B, with a crew of four, entered service in 1985 on the cusp of the RMA and it is maintained with a mixture of military and contractor maintenance personnel. The B2, an RMA era bomber, entered

¹⁷ C.C Demchak, Complexity, Rogue Outcomes and Weapons Systems, *Public Administration Review*, 52, no.4 (July/August 1992): 347.

¹⁸ P.W. Singer, *Corporate Warriors: The Rise of the Privatized Military Industry*, (Cornell University Press: New York, 2003),.64.

service in 1997. The difference with the B2 is that it only has a crew of two and is primarily contractor maintained. Despite the increase in technology represented by the three bombers, it was the military technicians and other support personnel that bore the brunt of the force reductions due to the core capability cutbacks of the 1990s, not the operators. At a time when the need for maintainers is on the rise, the demographics are working against the military making the recruiting and retaining of personnel that much more difficult.

For the US, prior to the end of the Cold War, there was a single major enemy, the Soviet Union and her allies. Since that time, there have been numerous wars and conflicts, but none that was an obvious and pervasive threat to the US. As well, the rapid globalization of the world economy has meant that those who lived in the US and other western nations have shifted their view of life to include one that is filled with personal freedom and the pursuit of individual gratification and family. Accompanying these societal changes has been a decline of the prestige of the military. Military service used to be thought of as an honour, but that has slowly eroded to the point now where militaries are lowering their standards in an effort to keep up with recruiting goals.¹⁹

The frequency of US deployments since the end of the Cold War has increased with numerous peacemaking efforts and a wide variety of disputes that span the conflict continuum. Including the US deployments, "...in 2001 there were 24 major armed conflicts... in the 12 year post-cold war period 1990-2001, there were 57 different major

¹⁹ Jamie Wilson, "US Lowers Standards in Army Numbers Crisis." *The Guardian* (newspaper online); available from <http://www.guardian.co.uk/world/2005/jun/04/usa.jamiewilson/> ; Internet; accessed 28 November 2009.

armed conflicts...”²⁰ US deployments involving the North Atlantic Treaty Organization (NATO) and to a lesser extent the United Nations (UN) service are now frequent and military personnel can spend years in very dangerous conflict zones. The rate of deployments, personal and family sacrifice, and hardship that accompany military service have combined to become serious deterrents to recruiting and retaining personnel.

Ed Michaels, a director of McKinsley and Company, commented in an interview that the American economy is growing at three to four percent per year, but at the same time the number of talented personnel is dropping. In fifteen years, he commented that demand for talented personnel would grow by 25 percent but the supply will be down by 15 percent.²¹ It is against this backdrop that the US military is competing with civilian companies for the best and brightest needed to man and repair the complex weapons systems. It is getting increasingly difficult to recruit personnel, as they prefer to find civilian jobs that tend to pay better, are more convenient, and less demanding of families.

Combating the decline in the quality and quantity of recruits in the US has been a major dilemma. One of the solutions has been to decrease standards for entry into the military. However, the lowering of standards has a knock on effect of lowering the overall quality of the military and a decrease in operational effectiveness. A secondary effect of lowered standards is that it becomes difficult to find sufficient recruits with the necessary intelligence to become technicians. The unfortunate irony of the situation is

²⁰ Stockholm International Peace Research Institute (SIPRI), *SIPRI Yearbook 2001: Armaments, Disarmaments and International Security*, (New York: Oxford University Press, 2001), Appendix 1A, 1.

²¹ Charles, Fishman. *The War For Talent*, Fast Company Magazine (magazibe on-line) available from www.fastcompany.com/magazine/16/mckinsy.html ; Internet accessed 23 April 2009.

that the fewer technicians that are available, the greater the need for contractors and ISS to provide technical support. In order to gain recruits, countries have been using different approaches. In the US, one of the approaches has been the removal of citizenship as a requirement for military service in order to broaden the appeal to immigrants.²²

²² Natasha Mozgovaya. "U.S. Offers Citizenship in Return for Military Service." *Watching America* (on-line site); available from <http://watchingamerica.com/News/20784/us-offers-citizenship-in-return-for-military-service/> ; Internet; accessed 26 November 2009.

2.2 - The United Kingdom Background

At the end of the Cold War, the UK faced similar geopolitical, demographic and economic pressures as those in the US. The primary difference from the political perspective was that in the US they did not fully abandon the belief in the public sector providing services, whereas in the UK the belief was that, "...the private sector is almost invariably more proficient than public sector bodies in the generation of goods and services and the associated management of operations and projects."²³ The movement towards the greater utilization of private sector practices was called New Public Management (NPM).²⁴ As noted earlier, the Peace Dividend was championed by President George Bush and Prime Minister Thatcher and that concept fit in quite neatly with the belief in the private sector. The NPM concept was so highly thought of in the UK that it survived the successor governments of both Tony Blair and John Major.

In addition to the slightly different perspective on the role of the private sector, there were two other major differences in the background between the UK and the US. First, in the US, there has been a great deal of public scrutiny over the use of contractors, while the MoD largely escaped that.²⁵ Second, from the outset in the US the concentration has largely been on deployed contractors whilst the UK's initial entry into the field was primarily in the provision of support out of garrison. In the years since the

²³Trevor Taylor, "Contractors on Deployed Operations and Equipment Support" *Defence Studies*, 4 no. 2. (2004): 185.

²⁴ Mathew Uttley, "Private Contractors on Deployed Military Operations: Inter-Agency Opportunities and Challenges", Heritage Lecture 972 delivered 15 June 2006. Available from, www.heritage.org/research/nationalsecurity/h1972.cfm . Accessed 21 November 2009, 2.

²⁵ Mathew Uttley, "*Contractors on Deployed Military Operations: United Kingdom Policy and Doctrine*", Strategic Studies Institute United States Army War College. September 2005, v.

Peace Dividend, this balance has shifted in the UK as the military has modernized and moved to a high tech arsenal. It still has extensive garrison based contractor support but with the implementation of the Smart Acquisition programme, it has moved into deployed maintenance contractor support as well. The programme was introduced in 1998 with the aim of improving the acquisition of weapons systems but one of the expected outcomes was that the weapons systems would have commercial support unless it would, "...cause unacceptable risk to the front line."²⁶

Like the US, the UK drew down its military forces at the end of the Cold War. During the 1990s, the UK military endured cutbacks of 25 percent in spending and 30 percent in manning totaling some 60,000 personnel, and then an additional 22,500 personnel were reduced between the years of 1995-1997.²⁷ Like the US, the UK military was also attempting to preserve their core capabilities during the reductions, and the service support personnel bore a significant portion of the cutbacks. For the UK, the end of the Cold War was particularly hard on the military as its major focus had been the Soviet Union and to a lesser degree, the domestic threat, unlike the US which had the continental US and Pacific Rim defences to worry about as well. The cuts to the military were very difficult and led to problems with the deployments in the Balkans when there

²⁶ J. Oughton, "The Defence Logistics Organization – Transforming Logistics Support to the Armed Forces", *World Defence Systems*, Vol.3, No.2 (July 2001): 97-99, quoted in Mathew Uttley, "Contractors on Deployed Military Operations: United Kingdom Policy and Doctrine, Strategic Studies Institute United States Army War College. September 2005, 36.

²⁷ Keith Hartley, *UK Defence Spending*, (Lancaster and York: Defence Research Institute, 2001), 2.

were, "...growing doubts about the capability of the British military to meet public and political expectations..."²⁸

The lack of a clear enemy left the UK military without a clear direction and this coupled with the demographics challenge created, "...uncomfortable uncertainty for the overall military profession."²⁹ Like other western nations, the UK had been experiencing a steady drop in the birth rate which left fewer age appropriate adults to be recruited into the military. The combination of lower birth rates and longer life-spans made it difficult for the recruiters to meet their targets. When these factors were put together with an improving economy and the increasing number of the high paying tech sector jobs, it is not surprising that the UK military struggled with technical personnel losses and poor recruiting in the 1990s.

An additional demographic factor in both Europe and the UK was that the tradition had been that the first son inherited the family farm or business and the second son went entered military service. As the birth rate and subsequent family sizes began to decline, there was less inclination for the sole son to enter the military.³⁰ In his article about personnel, Schindlmayr succinctly summed up the problem in not only the UK but in most western militaries;

The military is often seen as the employer of last resort; and, with ample opportunities elsewhere in society, it lacks appeal to

²⁸ Richard Ayers, "UK Military Tightens its Belt in the Balkans." *BBC News Online*, (news online); available from http://www.news.bbc.co.uk/2/hi/uk_news/323900.stm ; Internet; accessed 28 November 2009.

²⁹ Krishnan, 20.

³⁰ George H. Quester, "Demographic Trends and Military Recruitment: Surprising Possibilities." *Parameters*, Vol. 35. Issue 1 (Spring 2005): 34.

many young people. This is particularly true for those with skills that are in high demand, such as information technology experts. With fewer young people, demand for their services and skills will intensify in the future. Defense will need to compete not only against other employers in the national setting, but increasingly against international competitors who may be able to provide higher salaries and enhanced opportunities...³¹

The reality of the demographic issues and the oncoming RMA were not lost on the UK.

The success of the US high tech arsenal in the Gulf War I and the progression of the UK towards increased privatization were key in the movement towards contracted maintenance personnel. With the political climate favouring the culture of privatization it was an easy move as the military began to move towards the network centric platforms that were necessary for interoperability with the US. The integration of ISS contracts under the Smart Acquisition was a natural progression as the technical demands of the new equipment exceeded the military remaining capability. The weapon platform acquisitions which were announced in the succession of UK defence reviews of the 1980s and 1990s called for further increases in privatization which culminated in the Strategic Defence Review (SDR) of 1998 which called for a 19 percent increase in defence spending.³²

³¹ Thomas Schindlmayr, "Future Personnel: Where Will They Come From?" *Defense & Security Analysis*, Vol. 18, Issue 1 (March 2002): 86.

³² Malcolm Chalmers, "Preparing for the Lean Years" Future Defence Review Working Paper 1. (London: Royal United Services Institute for Defence and Security Studies, RUSI, July 2009), 4.

2.3 - Canada Background

Canada faced the same pressures that the US and the UK did at the end of the Cold War. The Mulroney Conservative governments of the 1980s had laid plans for improving defence spending, but the worldwide Peace Dividend derailed those efforts. The successive Jean Chrétien Liberal governments of the 1990s proceeded to dramatically scale back military spending and manning from a total of 100,000 tri service personnel to only 60,000.³³ The combination of a lack of an easily definable enemy, voter apathy over defence spending, and the public desire to reduce the debt allowed the military to decay.³⁴

In the 1994 White Paper, the Canadian Government under Chrétien abandoned the buildup of the military put forth in the 1987 White Paper, commenting that Canada, "...must maintain a prudent level of military force" and that "Most areas of defence will be cut" further, "Personnel cuts will continue"³⁵ In his paper on defence privatization, Spearin notes about the 1994 White Paper that, "Its drafters recognized that with the end of the Cold War and Canada's debt sitting at over \$500 billion, DND would have to do things differently."³⁶ All in all, the post Cold War Canadian military had its budget

³³ David Detomasi, "The New Public Management and Defense Departments: The Case of Canada." *Defense & Security Analysis*, Vol.18, no.1 (2002): 52.

³⁴ *Ibid.*, 52.

³⁵ Canada, Department of National Defence, ADM Pol Website, *The 1994 White Paper on Defence*, available from <http://www.forces.gc.ca/admpol/newsite/downloads/1994%20White%20Paper%20on%20Defence.pdf>; Internet: Accessed 18 Nov 09, 3,6,7.

³⁶ Christopher Spearin, "Not a 'real state'? Defence Privatization in Canada." *International Journal*, (Autumn 2005): 1096.

reduced by 30 percent between 1993-1998,³⁷ a level of cutback that precipitated the loss of manning and the first forays into maintenance contracting.

In Canada, prior to the end of the Cold War, military service was a relatively static affair. There were deployments for training and exercise, but they were not that frequent nor were they that dangerous. It was in this period that Canada earned its reputation as a peacekeeping nation. The deployments were not terribly hazardous due to agreed cease fire terms by the combatants and the Canadians acted to keep that peace. With this environment, it wasn't difficult to attract recruits to a stable and static military. However, post Cold War Canada faced the same demographic and operational pressures that had appeared in the US and the UK.

The Canadian Chief of Military Personnel (CMP) acknowledged this in his address to the Canadian Forces College (CFC) in 2008.³⁸ In his presentation, Major General (MGen) Semianiw noted that within ten years the number of people approaching retirement age would be greater than the number of people entering the workforce and at the same time the Canadian Forces (CF) were aging. Of particular note, he pointed out that the attrition rate in the military was rising with the losses in the senior non commissioned officers and officers in the 6-16 years of experience year point as being a serious concern. Compounding those losses is an overall attrition rate that will hover between 8-9 percent between 2008-2015. His comments agree with those in the report

³⁷ Cooper et al, 15.

³⁸ MGen W Semianiw, "Chief Military Personnel" (lecture, Canadian Forces College, Toronto, ON, December 08, 2008), with permission.

written by Townsend in 2006.³⁹ MGen Semianiw then discussed some of the external factors that he felt were causing the attrition: aging workforce, low birthrate, a robust economy, the war for talent, and better opportunities. The war for talent is particularly difficult as it means that fewer high quality recruits are looking towards military service. The issues noted by MGen Semianiw are common to the other western militaries, and their solutions are very similar, contracting.

Combating the decline in the quality and quantity of recruits has been a major dilemma. One of the solutions has been to decrease standards for entry into the military. However, the lowering of standards has a knock on effect of lowering the overall quality of the military and a decrease in operational effectiveness. A secondary effect of lowered standards is that it becomes difficult to find sufficient recruits with the necessary intelligence to become technicians. The fewer the technicians, the greater the need for contractors to provide technical support. In order to keep the ranks up the Canadian military has increasingly attempted, among other things, to increase the recruitment of immigrants and aboriginals, as they are one segment of Canadian society that is showing growth. The two other approaches are the increasing move towards high tech equipment and the implementation of ISS contracts with all new equipment being introduced into service.

In the case of maintenance personnel, the solution for the lack of manpower was highly problematic. Maintenance manning levels would take years to rebuild due to the very lengthy training needed to produce technicians. For example, it takes two and a half

³⁹ Mark, Townsend. Army Faces Massive Manpower Shortage, *The Observer*, 5 March 2006, 1.

years of trades training spanning a three to four year period to produce a journeyman level vehicle technician, qualification level five, in the Canadian Military and even longer for the more highly technical trades. As a result of the issues surrounding insufficient personnel and the operational needs of the militaries, the CF was faced with the choice of accepting lower levels of operational readiness or utilizing maintenance contractors. In her 2001 report the Auditor General of Canada, Sheila Fraser noted that the CF could not guarantee the readiness of their combat equipment. In particular, "... there is a shortage of qualified maintenance personnel to staff fully operational units and maintenance depots..."⁴⁰

The CF expends a significant amount of financial resources on personnel, 51 percent according to CMP.⁴¹ A picture of those costs can be obtained using the annual Cost Factors Manual (CFM). In the manual's tables, the direct and indirect costs for each rank can be determined as well as those for the regular and specialist trades, such as maintenance technicians are higher than those for a regular soldier.⁴² Using the working rank of Master Corporal (MCpl) technician as an average, the lifetime costs can be determined. The costs are not exact, as they will vary for each individual depending upon their rank and specialty, but they will suffice for the level of detail required to provide a workable example of costs. As a baseline, it will be assumed that the MCpl retires after twenty years and is a level 1 specialist. This rank and trade level is used as it

⁴⁰ Office of the Auditor General of Canada. *2001 Report of the Auditor General* (Ottawa: Auditor General of Canada, 2001), 30.

⁴¹ MGen Semianiw, 8 Dec 08.

⁴² Department of National Defence Website, "2008-2009 Cost Factors Manual", Available from http://admfincs.mil.ca/subjects/fin_docs/cfm_08/cfm08_e.asp ; Internet, accessed 25 May 2009.

is one step above the working level of corporal and so it will account for those that retire at a higher rank and number of years of service.

With the assumed rank and years of service, it can be determined that if a technician joins at age twenty, and serves for twenty-five years, that the lifetime costs will be \$3.6 million dollars (Canadian). That sum is a significant amount of money committed for a single Veh Tech and when the costs of deployments and additional training are added on to this technician, the costs rise even higher. The manning of the Vehicle Technician trade currently sits at 2,265 personnel of all ranks. Using the average figure above, the life costs for these individuals alone could exceed \$815 million dollars (Canadian). Given the high lifetime costs of the average individual, it is easy to see the attractive nature of contracted maintenance as many of the costs that are sunk into the military technician disappear. Kidwell noted that the move to contracting provides, “Significant cost reductions accrue from lower training, benefit compensation, retention incentives, and retirement costs.”⁴³ The lack of training and retention costs are not the only financial benefits of moving towards contracted maintenance.

Additionally, one of the attractions of moving to contracted maintainers is the amount of productive hours that can be derived from them. In a typical static Canadian workshop, military technicians are expected to be able to produce 1312 hours of labour per year. In a field or deployable unit, that number drops to 600 hours per year due to

⁴³ Deborah C Kidwell., *Public War, Private Fight? The United States and Private Military Companies*, (Global War on Terrorism Occasional Paper 12. Fort Leavenworth Kansas: Combat Studies Institute Press, 2005), 28.

the demands of field/deployment training and preparations.⁴⁴ In a contractor's workshop, using seven and a half hours of production a day and factoring in nine statutory holidays, the labour expectations would be close to 1,800 hours. It is obvious that the additional 488 hours of productive labour in static operations would substantially increase the productivity expected out of a contractor's workshop. On deployed operations, the difference in production hours is a dramatic 1,200 hours. The huge difference in productivity between military and contractor technicians is a very persuasive argument for the use of contractors.

As technology has advanced, the weapons and equipment systems utilized by the military have also advanced. With the rapid increases in technology since the 1990s, there has been a requisite increase in the need for maintenance of that equipment. An example of this is the armoured personnel carrier (APC). In the early 1990s the Canadian army primarily utilized 1960s vintage tracked M113s with an additional small fleet of 1970s vintage wheeled APCs. At that time the M113 was an uncomplicated vehicle with technology that dated back to the Vietnam War. All of the Canadian Army vehicle technicians at that time were trained in basic M113 maintenance as part of their basic trades training or could pick it up fairly quickly as there were no high tech systems on the vehicle. With the introduction of the wheeled Light Armoured Vehicle (LAV) variants, starting with the Coyote in 1996, and soon thereafter the LAV III, all that changed.

⁴⁴ Department of National Defence. C-04-005-055/JS-001 *Maintenance Policy: Guide For The Design of Land Maintenance Workshops*, (Ottawa: DND Canada, 1995), 6

The standard Canadian Mechanized Infantry battalion of the early 1990s was supported by an integral maintenance platoon in the range of 36 personnel which included vehicle, weapons, material, and fire control system technicians who completed first line repairs on the battalions equipment. Those repairs were dictated by the permissive repair schedule and were essentially minor repairs that took no longer than four hours to complete.⁴⁵ The increased complexity of the LAVs and Coyotes meant that the integral maintenance platoon needed to be increased to over 50 maintenance personnel in order to provide that same basic service. The second line resources also needed a corresponding boost in strength. The introduction of these vehicles and others all occurred in the climate of reduced budgets and personnel that predominated in the 1990s.

The US, UK, and Canada have all faced very similar demographic, technological, and governmental pressures that have pushed the countries towards contracted maintenance support. There is a definitive difference in the degree of adoption between the countries, but the fundamental acceptance by the US and UK presents an obvious roadmap for Canada. Both the US and UK have accepted that a high tech military is the direction to proceed and the Canadian adoption of platforms like the LAV III indicate that Canada will follow down the high tech road, if to a lesser degree.

⁴⁵ Department of National Defence, B-GL-314-008/AM-002 *The EME Handbook* (Ottawa: DND Canada 1995), 65.

CHAPTER 3 – EXPERIENCE MATTERS

The approaches taken by Canada and its allies are similar but with marked differences in the scope of the contracting activities. Canada, the US, and the UK all use deployed contractors with the overall desired effect being that the contractor provides maintenance services in a manner such that they are invisible to the operators. In other words, the operators do not know that they are receiving equipment that has been maintained by a contractor instead of a uniformed technician. Ideally, the contractors are to produce no impact on the operational activities of the user.

The US and UK are the pioneers of military privatization.⁴⁶ For Canada, the experiences of its allies are important as their greater experience with contracted maintenance support can provide perspective and guidance. As Canada moves forward, learning from not only our own experiences but those of the US and UK will be informative. Not all of the experiences and practices of the US and UK will be applicable due to the difference in the sizes of the militaries and the willingness to implement those practices. However, their greater history with maintenance contractors can provide valuable advice and lessons learned.

⁴⁶ Krishnan, 46.

3.1 - The US Experience

In the US Army doctrine, “Contractors are persons or businesses, to include authorized subcontractors, that provide products or services for monetary compensation...In a military operation, a contractor may be used to provide life support, construction/engineering support, weapons systems support, and other technical services.”⁴⁷

The US experience with deployed contractors is far greater than that of the Canada or the UK. There are several reasons for the disparity between them. First is that the Americans utilize an extremely high tech military, arguably the most high tech in the world, and with the increase in advanced weaponry and ancillary systems comes the requisite increase in the need for maintenance contractor support. Second, with their vastly greater experience with the use of contractors comes less institutional resistance to them.

The history of the US reliance upon contractors dates back to the American Revolution during which the ratio of contractors to soldiers was 1:6. That ratio in the Balkans reached 1:1⁴⁸ and at present the ratio in Afghanistan is 1:1.3.⁴⁹ In the US military right now, both domestically and abroad, contractors perform some functions

⁴⁷ United States. Department of the Army, FM 3-100.21, *Contractors on the Battlefield*, (Washington D.C. Department of the Army, USA, January 2003).

⁴⁸ Stephen, M. Blizzard, “Increasing Reliance on Contractors on the Battlefield: How Do We Keep From Crossing The Line?” *Air Force Journal of Logistics*, Vol 28, no. 1, (Spring 2004): 6.

⁴⁹ Antonie Boessenkool, “Contractors Surge To Record Numbers in Afghanistan,” *Defense News*, (journal on-line); available from <http://www.defensenews.com/story.php?i=4286204> ; Internet; accessed 20 November 2009.

that have a direct impact on operations. They not only maintain critical weapons systems, in some cases operate them as well. The scope of the systems that contractors operate/maintain is broad and ranges from flying strategic airlift to operating in part or entirely the Joint Surveillance Target Attack Radar System (JSTARS), Patriot Missile System, and the Global Hawk and Predator UAVs.⁵⁰

The US has approached its requirement for contracted maintenance support from several perspectives. First, the severe cutbacks that the US military faced at the end of the Cold War saw their force structure reduced by 30 percent, the DoD budget by 40 percent and the acquisitions' budget by 70 percent. The dramatic losses in funds and personnel combined with an ever-increasing number of deployments forced the US military to re-think its traditional support concepts. In addition, the drawdown in the US military also removed two thirds of the US Army and three quarters of the US Air Forces from Europe thereby cutting out crucial logistics infrastructure.⁵¹ All of these factors indicate that a fundamental shift was to take place. While the shifts due to budget and personnel issues were large, it was the shift required by the movement to high tech weaponry and network centric warfare that was the most telling.

As noted earlier, it was the change in the technology of the new US equipment, starting with the M1 MBT, that was the fundamental factor in the movement to contracted maintenance support. In fact, all new weapons systems purchases in the US

⁵⁰ Maj Lisa L. Turner and Maj Lynn G. Norton, "Civilians at the Tip of the Spear," *The Air Force Law Review*, No 51 (Spring 2001): 9.

⁵¹ *Ibid.*, 7.

now come with an accompanying four year ISS contract.⁵² Even with governmental direction, reliance upon high tech weaponry has expedited the change to contracted maintenance support. The ever changing technology has made it difficult to keep soldiers trained to maintain, and in some cases, operate sophisticated weapons. The move to high technology alone is driving the military to rely on contractor support.⁵³ The RMA has made the US military an incredibly complex and advanced system that is reliant upon contractors for its day to day operations.

Even without the technological changes, issues with manpower would have forced the US to re-think its support. With the US draw down in Europe, a great deal of the US military's support capability for force projection was lost. As noted earlier, the military may have decreased in size but the operational tempo rose. With the increase in deployment, there were new issues to deal with. Frequently the sizes of the deployed military forces were mandated. In other words, force caps were instituted. The force caps were placed due to any number of different reasons: treaties, governmental decrees, Status of Forces Agreements (SOFA). The limitations on the number of troops that could be deployed forced the planners to examine the support arrangements. The normal course of action was to maximize the number of combat troops and limit the number of support troops. As contractors do not form part of the force caps, they were an attractive option to the military looking to maximize the number of combat soldiers on the ground. Contractors were then used to perform traditional military CSS functions. In the case of

⁵² Steven J Zamparelli, "Contractors on the Battlefield: What Have we Signed up For?" *Air Force Journal of Logistics* 23, no. 3. (Fall 1999): 12.

⁵³ *Ibid.*, 12.

weapons and equipment systems, this took the form of deployed contractor maintenance technicians.

As shown in the literature, contractors can be a tremendous asset and in fact a force multiplier.⁵⁴ Of these benefits, Gour and Hunter noted that contractors were invaluable in providing support to surge demand, changes in tempo, and the rare skill sets demanded by the maintenance of high tech equipment. Having contractors supporting the force allows the commander to focus on the operations at hand.⁵⁵ One of the prime benefits that they do bring is demonstrated by the US Army experience with the LOGCAP contract. The terms of the contract provide that the contractor must have an advance team on ground within seventy-two hours of formal notification. Further, within 15 days they must be capable of receiving fifteen hundred personnel a day, and within thirty days they must be able to feed and house twenty-five thousand and receive an additional 3,000 per day.⁵⁶ This ability is a tremendous asset to the US operational commanders as it allows them to build up their forces unimpeded by the logistical necessities, including the maintenance of equipment,⁵⁷ and the running of base camps.

The US reliance upon contractors has reached such an extent that studies carried out between 1998 to 2003 show that the DOD was expending half of the budget on

⁵⁴ Dr Daniel Gour, and Carrie Hunter. *Contractors on the Battlefield: A Support Force to Manage*, A report prepared for The Lexington Institute, Arlington Virginia, Feb 2007, 4.

⁵⁵ *Ibid.*, 1.

⁵⁶ Army Material Command, *Logistics Civil Augmentation Program: Operation Joint Endeavour* (Alexandria: United States Army Audit Agency, 1996), 6.

⁵⁷ Department of the Army, Army Material Command, *Logistics Civil Augmentation Program*, (Washington: Headquarters Department of the Army, 1985), 2.

contractors. Of those contracts, 56 percent were for service contracts.⁵⁸ Despite the size of the commitment to contractors, the US experience for the most part has been positive and in many cases essential. In the aftermath of the Gulf War a number of senior logisticians were interviewed and were unanimous in their opinions that the contractors had played a vital role in the success of the conflict particularly those dealing with high tech weaponry.⁵⁹

⁵⁸ Larry Malkinson, “*Outsourcing the Pentagon: Who Benefits From the Politics and Economics of National Security.*” Report for The Centre for Public Integrity, (29 Sept 2004); available from www.publicintegrity.org/pns Internet; accessed 29 May 2009.

⁵⁹ George B Dibble et al. *Army Contractors and Civilian Maintenance, Supply and Transportation Support During Operations Desert Shield and Desert Storm*. Volume 1: Study Report AR113-01RD1. Logistics Management Institute, Bethesda, MD: June 1993, 2-1.

3.2 – The United Kingdom Experience

Since the inception of the NPM during the Thatcher years, the UK has aggressively pursued the use of contractors. Unlike the US and Canada, there is no explicit definition of a contractor in UK doctrine, rather it is loosely defined as, “Contractors on deployed operations (CONDO). A generic term relating to all civilian contracted personnel deployed in support of military operations. Such personnel could be deployed in support of a variety of contracts, including Original Equipment Manufacturers.”⁶⁰

In the UK the use of contractors in support of deployments is stipulated in the CONDO policy as well as the “Public Private Partnership” (PPP) program. The Honourable John Spellar, a former UK Minister of State for the Armed Forces, noted in a speech in 2000 that the MoD’s “objective is to incorporate the private sector so firmly into the doctrine for deployed operations that Planning Staffs and their Commanders will take it for granted that their task force will include a contract support element.”⁶¹ To this end, the UK has taken a very aggressive approach to contracting out its deployed support services as can be seen by their contractor numbers. In the first Gulf War, the UK had 100 civilian contractors,⁶² and in their recent Iraq efforts they had no less than 1,500.⁶³

⁶⁰ United Kingdom, Ministry of Defence, Joint Doctrine Publication 0-01.1, *United Kingdom Glossary of Joint and Multinational Terms and Definitions 7th ed.*, (Shrivenham, UK. 20 September 2006), c-22.

⁶¹ Speech By UK Minister of State for the Armed Forces John Spellar, Royal United Services Institute, February 8, 2000, cited in Mathew Uttley, “Contractors on Deployed Military Operations: United Kingdom Policy and Doctrine, September 2005, 1.

⁶² Taylor, 195.

⁶³ United Kingdom Ministry of Defence, “Operations in Iraq: Lessons for the Future”, (London: Directorate General Corporate Communications, July, 2003), 45.

The reason for the dramatic increasing in contractors was that the UK admitted that, “Military personnel do not possess all of the specialized skills required to maintain an increasing amount of technologically advanced equipment.”⁶⁴

In the early 1980s the UK had not moved towards contracting as it was operating under a tenant that the MoD and DoD would provide all of the services for which they were responsible as that would provide for operational effectiveness.⁶⁵ In between 1980 and 1997 the UK had started a policy that led to an increasing involvement of contractors in the military. That period corresponds with the rapid rise in technology and the RMA. In 1998, the Better Quality Services (BQS) initiative began with the goal of examining all of the MoD support operations to see if they should be contracted out, cut, or restructured. Since that time, the UK has been one of the countries that have followed the US down the path towards network centric warfare. For the UK, the increasingly sophisticated equipment required for network centric warfare has demanded a great deal of contractor support, in specific specialist maintainers.

The approach that has been taken by the British Defence Logistics Organization (DLO) is that it is committed to being a ‘decider’ as opposed to being a ‘provider.’ The DLO is stating that it intends to focus on the levels of support required and determining who provides them, often the private sector, instead of providing the support.⁶⁶ The UK government has moved to the perspective that the private sector is more efficient than the

⁶⁴ Ibid., 45.

⁶⁵ Mathew Uttley, “Contractors on Deployed Military Operations: United Kingdom Policy and Doctrine.” Strategic Studies Institute United States Army War College, September 2005, 4.

⁶⁶ Taylor, 1.

public sector and the result is they are increasingly moving towards contracted support. The gist of this thought is that market forces and the desire to make money drive the private sector so it tends to be more efficient than the non-profit public sector. This approach fits rather well with the UK's movement to modernize their armed forces. The UK has ambitious defence equipment acquisition plans for platforms such as the Trident submarine and the Joint Strike Fighter. Those weapons systems are extremely high tech systems and are almost exclusively contractor maintained.

3.3 – The Canadian Experience

In Canada, the definition of a contractor is, “...an entity with whom DND/CF has entered into a contract to build or otherwise create and deliver a good, service or equipment.”⁶⁷

The first Canadian foray into deployed contracted services came about due to the reductions in the size of the forces in the early 1990s. The Canadian military was determined to be over strength by the government after the end of the Cold War and the aim was to reduce the CF strength from 100,000 tri-service personnel in 1989 to 60,000 by the end of 1999. In response to this the military created the Force Reduction Program (FRP) in 1991. Unfortunately the FRP was a little too popular and that combined with poor record keeping allowed some of the support trades to be drawn far below their requirements, in particular the Vehicle Technician (Veh Tech) trade.⁶⁸

In what can only be described as very poor timing, as the forces were reducing in size, the CF operational tempo was increasing with three major domestic operations and an increase in deployed operations. The result of the increase in operational tempo was that the under strength CSS trades were becoming increasingly stressed. This led to the first foray into contracting, the hiring of ATCO Frontec for the Logistics Contractor Augmentation Support (LOGCAS) in support of OP ABACUS, the Y2K domestic

⁶⁷ Canada. Department of National Defence Lexicon; available from , <http://dgmssc.ottawa-hull.mil.ca/matKNetSearch/Lexicon> ; Internet; accessed 15 April 2009.

⁶⁸ Department of National Defence, *7055-29(DGA) Audit of Force Reduction Programs*, (Ottawa: DND, Jan 1997), 1.

operation.⁶⁹ The contract aim was to allow logisticians to be freed up for other duties and to reduce their operational tempo. The contract was a success and led to the first venture into deployed contractors in the Balkans in 2000. That initiative was announced in June 2000 and commenced in September 2000. The aim was to reduce half of the Canadian CS and CSS personnel deployed with OP Palladium.⁷⁰ Since those initial efforts, the use of contractors has been more frequent, primarily to provide base camp support in the form of the Canadian Contractor Augmentation Program (CANCAP) contract. The deployed CANCAP contract was viewed as success and that success along with the continued pressure on the CSS trades brought about by deployments has led Canada to continue with CANCAP.

The traditional view within the Canadian military was that it will be self sufficient in hostile environments. That view however is no longer viable and deployed contractor support has evolved to the point where it is no longer an afterthought, but a factor in the estimates. For instance, in the concept of operations on the J4 page of the Canadian Expeditionary Force Command (CEFCOM) website, it is noted that contracting advice and support is an integral function.⁷¹ Institutional resistance to contracting still exists but with increasing exposure, it is starting to fade. A review of papers written at the Canadian Forces College (CFC) shows the institutional resistance was quite prevalent during the early days of LOGCAS. A sample of some of the titles from that timeframe: Contracting out logistics support: the smart move? Contractors on the battlefield: a risky

⁶⁹ LCDr Macarena Barker and Captain Pam Hatton, "Contractors in Support of Operations: A Canadian Perspective", *PASOLS LOG*, 10, (August 2000): 11.

⁷⁰ *Ibid.*, 11.

⁷¹ CEFCOM Website, "*Logistics CONOPS*" Available at <http://cefcom.mil.ca/sites/page-eng.asp?page=3757>. Internet: accessed 01 Jun 2009.

proposal, Contractors on the battlefield: have we done our homework? While these titles are a small sample, they are representative of the institutional resistance that was initially put forward within the CF. The authors were showing the leanings of their Cold War backgrounds and relying upon their collective comfort zones. As CANCAP has proven to be successful and has relieved some of the pressure on the CSS branches, the flavor of the papers has changed to titles such as: Civilian contractors on deployed operations: an enabler for the Canadian Forces.

One experience of contracted maintenance support for Canada that differs from the US and UK is that contractors do not deploy out of the secured base facility in a non-permissive environment. This became an issue when dealing with the factory service representatives (FSR) for the Armoured Patrol Vehicle (APV) the RG 31 Nyala. In the FSR Terms of Reference, nowhere it is mentioned that the FSRs would deploy out of the base in order to assist or conduct any repairs. The crux of the issue is that undoubtedly some of the vehicles will break down while at the base, but the majority would have maintenance problems while on patrol away from the secure facilities. The issue is then, how does an FSR complete the repair, a vehicle in a dangerous area, fulfilling the contract, when the FSR cannot deploy? The Life Cycle Material Manager of the APV noted that the military vehicle technicians ended up repairing the vehicle in the forward areas. The point being made is that while the military technicians did not have any formal training on the vehicle that they had trained on enough large wheeled armoured diesel vehicles that they could figure out what to do. After several iterations, the FSR contract for the APV was not renewed as once the warranty was over that the expense

could not be justified once the military technicians were able to take over the work. Contracted maintenance support is vital, but it is not required for every vehicle or weapons system.

One aspect of Canada's experience with contracted maintenance support could certainly be viewed as a double-edged sword. The beneficial side is that the contractor can provide technical support, surge support and a maintenance backbone of technicians with scarce qualifications. Unfortunately the other edge of the sword was that in order to provide the support, they needed to get the personnel from somewhere, and frequently that meant raiding the military for its technicians. For example, SNC-Lavalin is the largest Canadian Engineering firm and one that has provided contracted maintenance to the Canadian Military on more than one occasion. A look at the jobs listing for SNC-Lavalin on the Hire Canadian Military website reveals that the company is hiring technicians for the services contract that they hold in Kandahar.⁷² In the listings, SNC-Lavalin is explicit in its desire for the technicians to have prior military experience and in certain of the listings, military qualifications are required. Losing valuable technicians to civilian companies is therefore a very real concern. In a Canada Press article focused on the lack of armoured vehicles available to the army, the ADM Mat, Mr Dan Ross, is quoted as saying that a lack of vehicle technicians was hampering the return of damaged vehicles to service.⁷³ This is an issue for a small military that is already struggling with a shortfall of technicians.

⁷² Hire Canadian Military Website at <http://www.hirecanadianmilitary.net> ; Internet; accessed 21 April 2009.

⁷³ Murray Brewster, "DND Looks at Buying Light Tanks to Replace Battered Afghan Fleet" *Canadian Press*, 26 May 2009.

The typical non deployable aspect of the Canadian context is amplified in Annex A to the Statement of Work for Task Order TFA-KAF M001, the Task Order for Afghanistan. Under the Equipment Maintenance (Land) portion of the concept of operations, it states the following: “Provide maintenance to standard commercial pattern (SCP) vehicle, all terrain vehicles (ATVs), aerial line trucks and commercial pattern forklifts, and inspect and certify refueling vehicles inspect and repair sea containers and conduct non-destructive testing on civilian pattern forklifts and jack stands.”⁷⁴ It does not state anywhere that the contractor is to provide maintenance to any Standard Military pattern Vehicles (SMP); an approach that is markedly different to those taken by the US and the UK in which the maintenance contractors work on a vast array of weapons systems and equipment.

There is some equipment in Canada that is totally maintained by contractors with a possible deployable aspect - the Kingston class Maritime Coastal Defence Vessel (MCDV). The ship was built to mainly commercial specifications with a view to having it maintained by contractors. While the Canadian Navy has long experience with maintenance contractors, this was the first instance of a ship that was totally maintained by an In Service Support Contractor (ISSC). This contract was an acceptance of the fact that this arrangement was both an efficient and cost effective method of supporting ships built primarily to commercial standards and maintained in accordance with Lloyds Registry of Shipping requirements.⁷⁵ The contractor completes all maintenance on the

⁷⁴ Department of National Defence, Annex A to TFA-KAF-M001 *Statement of Work Annex A to Task Order TFA-KAF-M001*, (DND:Ottawa 2006), 4.

⁷⁵ Department of National Defence Website, *Minor Warships and ISSC*, Available from <http://dgmepm.ottawa-hull.mil.ca/dmcmdux/mwissc.asp> ; Internet; accessed 10 June 2009.

ships unless it is a survivability issue when the ship is out at sea. There are penalties that Canada must pay if it completes maintenance on the ship unless it is a survivability repair. The MCDV operates primarily in coastal waters so potential problems around contractor availability while deployed in Canadian waters is not a major concern. However, in the Concept of Operations for the MCDV, it does note that; "...the ships may be deployed anywhere in the world, but consideration must be given to the special support arrangements, which affect such deployments."⁷⁶ The contract is very specific; 35 percent of the ships availability must be set-aside for the contractor. It is a worry when the maintenance support contractor dictates the operational availability of a warship.

Even when not deployed in an operational theatre, the CF needs to be cognizant of certain aspects of contracted maintenance. The experience surrounding the maintenance woes of the EH 101 Cormorant in Canada is a prime example of this. When the military purchased the EH101 from Agusta-Westland, the In Service Support (ISS) contract was contracted out to the lowest bidder, the IMP Group, instead of going to the OEM. Numerous articles have been written criticizing this decision and the decision not to purchase the technical data for the helicopter up front as the reason for the continued maintenance problems suffered by the helicopter. The Cormorant has suffered from almost continuous and very serious maintenance issues and continues to suffer from a lack of spare parts. The ongoing bevy of woes have resulted in an aircraft availability of

⁷⁶ Department of National Defence Website, "*Concept of Operations*", Available from, http://navy.dwan.dnd.ca/english/asstcms/dmpor/Docs/Coastal/Repository/KIN_CLASS/CONOPS_jun98/KINGSTON_COO.doc ; Internet, accessed 10 June 2009.

less than 50 percent.⁷⁷ The point is that had the OEM been given the ISS, then the government would have the ability to force the OEM to provide the spares on a timely basis or to provide rapid redesign of the problematic parts. As it is, the government has no contractual ‘hammer’ to force the OEM to provide parts and technical support in a timely manner. This is not an indictment of IMP and its maintenance practices; rather it is a caution that if the military is going to contract out maintenance, then it is buyer beware. The Cormorant, when it works, is a superb helicopter, but the operational effectiveness of the units that operate it has been severely impacted by the way the ISS contract was handled.

Another aspect of the expenses of the ISS is that of the cost of intellectual property rights. In Canada when the National Defence Headquarters (NDHQ) was reduced, one of the sections that was hard hit was the Associate Deputy Minister of Materiel (ADM Mat). ADM Mat is the section of headquarters where the engineers, LCMMs and acquisition personnel work to provide the cradle to grave management of the military inventories of weapons and equipment. It was also the repository for the intellectual property of the weapons and equipment that was needed to provide in service engineering support.

Intellectual property rights are expensive to acquire as they allow the holder the complete specifications to the equipment and the ability to re-design, modify and otherwise engineer the equipment. In the years before acquisition reforms, the military

⁷⁷ Department of National Defence, *DRDC CORA TM 2008 On the Availability of the CH149 Cormorant Fleet in an Ideal Sparing Situation*. (Toronto: DRDC June 2008), 7.

would purchase these rights as part of the acquisition of new equipment. OEMs will sell those rights but they are expensive to purchase and maintain as they require teams of engineers and specialist personnel to manage them. In the reorganizations and cost cutting measures of the 1990s, such as FRP, Delegation of Authority and Accountability Trial (Delegaat), Management Command and Control Re-engineering Team (MCCRT), these staffs were reduced. After 1991, the Government of Canada amended its policy on intellectual property rights so that they were not acquired as part of a contract unless they met a specific set of criteria for the benefit of the country.⁷⁸ There were exceptions for national security and a few other reasons, but for the most part, as equipment left the service and was replaced, the intellectual property rights of the new equipment was not acquired. The government and the Canadian military moved away from them as maintaining them were expensive in terms of manpower and cost. The second reason for the move was a socio-economic one. There is an economic value in intellectual property rights as they can be further exploited for commercial reasons. In 1991, the government decided that it was not in the public's interest for the government to keep the intellectual property rights as the private sector was best suited to make use of them for commercial purposes.

The span difference in experience with contracted maintenance between Canada and the US and UK is large. Of those experiences noted, there are three that are of particular note for Canada. First is the deployable nature of maintenance contractors and

⁷⁸ Treasury Board of Canada Secretariat Website, "Policy on Title to Intellectual Property Arising Under Crown Procurement Contracts" Available from, <http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=13697§ion=text#chaintro> ; Internet; accessed 12 May 2009.

second, the ability of poor contracting practices to all for the dictation of terms by the maintenance contractors.

In the case of the US and UK, some of their maintenance contractors can deploy into non permissive areas which is not something that the Canadians currently do. This is of particular interest to Canada as it would allow broken equipment to be repaired by maintenance contractors in forward areas, but it also brings with it a number of issues that have to be dealt with including protection of the maintenance contractors. The issue will be examined in greater depth in the next chapter.

In the case of the MCDV, Canada has handcuffed itself by the ISSC contract that it signed. With the exception of survivability at sea repairs, the vessels are totally maintained by contractors. Second, the maintenance contractor dictates that 35 percent of the ships time has to be devoted to the contractor. What has happened with this ISSC is that the Canadian Navy is dependent upon the maintenance contractor. Far from being a panacea, in this case, the contracted maintenance is a problem. In a similar fashion, the contracted maintenance woes of the EH 101 have frequently crippled and grounded the fleet. While it can be argued that this is not solely the fault of the ISS, the fact that the OEM is not the prime ISS provider certainly contributes to the overall problems that plague the aircraft.

CHAPTER 4 – WITH THE GOOD COMES THE BAD – MAINTENANCE CONTRACTOR ISSUES TO BE AWARE OF

The prevalence of maintenance contracting within the militaries of the US and UK shows that there are undoubtedly advantages to it. However, along with the positive aspects, there are issues and concerns and possible pitfalls that need to be managed. These concerns may not be a large issue in a substantial military like the US, but they can be problematic or even crippling in a smaller military like Canada. The relevance of the concern is dependent upon the operational theatre and national considerations. For Canada, however, financial, oversight and legal, dependency, technological, and command concerns are all relevant due to the size of the military.

4.1 - Financial Issues

One of the primary concerns that has been raised in the literature and numerous US government reports is that of costs. Kidwell writes that, “As profit-driven entities whose mission may derive from any conceivable source with funding, the services that PMCs (Private Military Companies) offer their clients do not necessarily derive from any compelling national or humanitarian interest. Only the written provisions of the contract define contractor responsibilities.”⁷⁹ Kidwell is writing about the large transnational companies such as Kellogg Brown and Root, Halliburton or Vinnell that deal in multiple countries, but the essence of her point is that contractors are profit driven entities. Being

⁷⁹ Kidwell. 4.

profit driven is diametrically opposite to the motivations of the US, UK, and Canadian militaries, which take their direction from national governments.

The idea of working for profit is counter to the traditional military culture of Canada, the US, and UK. Winslow noted "...the core values of army culture are subordination of the self to the group and the idea of sacrifice."⁸⁰ When a military technician repairs a piece of equipment, they are doing so as a part of a team and their role is to ensure that the team's equipment is functioning smoothly and safely. It is understood that the team is depending upon them to provide properly functioning equipment, and due to this they are prepared and willing to make personal sacrifices for the good of the team. A military ethos like this is different than the one displayed by a contractor. That is not to say that the contractor will not do a good job, after all they are in the business to make money and that cannot be done by providing substandard work. The difference is that the soldier will make personal sacrifices for a team that a contractor will likely not make. The military technician will not refuse to work if it is dangerous or they have to go twenty-four hours straight; they have the 'can do' attitude.

Maintenance contractor's decisions are business and profit based rather than ethos driven. Being profit driven is crucial to understanding the work ethic of the contractor. It was previously noted that many of the technicians used by contracting companies were former military technicians. Given their pedigree, the assumption would be that they would retain that military ethos and bring it with them to the deployment. However,

⁸⁰ Donna Winslow, Canadian Society and its Army, *Canadian Military Journal* 4. no 4., (Winter 2003-2004): 21.

being former military, they also respond to orders and in the business world, profit is paramount. Maintenance contractors do and will respond to the contingencies that require extra work and effort, at a price. There is the chance, even if remote, that without proper foresight and planning that the use of a maintenance contractor could impact military operations if what they are requested to do does not fall within the parameters of their business model.

Moreover, contractors are driven to maintain viable levels of profit whereas the military does not have this concern. The danger of relying too heavily upon contractor support is that if the contractors become so integral to the conduct of operations that the business interests and sensibilities may impact foreign policy. Militaries are important instruments of foreign policy and should not be influenced by monetary issues but national interests

4.2 - Legal and Oversight Issues

A potentially very disruptive matter to deployed forces is that maintenance contractors have the right to strike whereas military personnel do not.⁸¹ Unless the contractor has been deemed to be providing an essential service, under Canadian law, they have the right to strike.⁸² Even if the contractor can guarantee that its deployed personnel will not undertake any strike or associated job action, there is no guarantee that the non-deployed contractor personnel will not strike. If the contractors have been assigned to provide maintenance to the force and they are on strike, then the force could quickly become hamstrung and unable to carry out their assigned mission. This concern is particularly sensitive in harsh environments or theatres involving a high operational tempo where equipment is maintenance intensive. Contingency plans must be developed in the event that the contractor fails to perform their duties. In the case of critical functions, it would be wise if military backups were designated to assume the maintenance contractor function should there be a withdrawal of services.

Another legal issue is that maintenance contractors are not bound by the Law of Armed Conflict as they are non combatants.⁸³ Due to this, their activities have, “ ... the potential to create international friction among allies and enemies alike.”⁸⁴ Therefore, as part of the Statement of Work for future contractor involvement, a thorough vetting of the

⁸¹ Richard Cardinali. “Does the future of military logistics line in outsourcing and privatization? Accountants – the new gatekeepers of war-time operations,” *Work Study*, 50, no 3. (2001): 110.

⁸² Canada.Department of Justice, *Canada Labour Code (R.S., 1985, c. L-2)*; available from <http://laws.justice.gc.ca/en/L-2/text.html>; Internet; accessed 27 November 2009.

⁸³ Zamparelli, 14.

⁸⁴ Kidwell, 4.

participation or association of contractors in or with other nations or conflicts is in order. The vetting would then be able to eliminate any contractors whose involvement in other conflicts or operations could be viewed as questionable. While this may seem to be overboard for technical contracting, the point is that the maintenance contractors that bid on services contracts tend to be large multinationals. The activities of the maintenance portion of the contract can pale in size and scope beside other aspects of the contract. Activities contrary to the Law of Armed Conflict for the most part would not apply to personnel engaged in technical support, but the other activities that the parent companies are engaged in must be examined. The classic example would be Blackwater in Iraq. After Blackwater lost its license to operate as a security contractor in Iraq, another of its operations, Presidential Airways, was impacted as well.⁸⁵ Even though Presidential Airways was not engaged in similar activities, the company paid the price of having the parent companies problems.

For the most part, this would not likely be a large Canadian issue as the companies that typically provide deployed contractor services to the Canadian military are small in comparison to their international colleagues. However, both ATCO Frontec and SNC-Lavalin have additional contracts in Afghanistan that are not under the aegis of the CF. ATCO Frontec runs the Kabul airport, and SNC-Lavalin is contracted to refurbish the Dahla Dam in Northern Kandahar Province. The connection is that both of these companies also provide services contracts to the CF in Canada as well as abroad. In the case of SNC-Lavalin, it is using a mixture of private and Afghan military personnel

⁸⁵ Newsweek, "Helicopter Shortage: State Department Fumbles Effort to Oust Blackwater From Iraq." <http://blog.newsweek.com/blogs/declassified/archive/2009/11/05/helicopter-shortage-state-department-fumbles-effort-to-oust-blackwater-from-iraq.aspx>: Internet; accessed 23 Nov 2009.

to provide security for the project. Obviously there is no intent here to link either company to non-ethical issues, but to point out that even in a relatively small market, like the services contracts for the CF, that the companies involved are also participants in other contracts in troubled areas around the world.

Oversight of the contracts and the contracting process are another problem that has frequently been mentioned in the literature. An excellent example is the CANCAP task order for support of the Canadian mission in Afghanistan that was prepared in July 2006 which set out a financial ceiling of 13.6 million Canadian dollars. In a series of amendments between August 2006 and February 2007, the value of the contract rose to 25.5 million and a number of capabilities were introduced, removed, augmented, and or decreased.⁸⁶ While there is no doubt that the changes were needed to support the Canadian effort, each change signaled that the military had not fully thought out the requirement in the first place. The danger with this is that it can lead to mismanagement or abuse of the contract. Each amendment makes the contract increasingly difficult to monitor as the contractor in theatre is not being managed by professional contracting officers. The lack of experienced contract officers coupled with ever changing requirements has the potential to cause problems. What would make sense would be a contract that has clauses written in to it that provide for the various contingencies. That way when the changes in tempo of the operations occur, the clauses can be enacted without the potential for error or abuse.

⁸⁶ Department of National Defence, "TFA-KFA CANCAP TASK ORDER" (Ottawa: DND Canada, Jul 2006-February 2007).

For the US military, the management and oversight on the contractors' activities has caused tremendous problems. There have been numerous cases of fraud, overspending, and other issues. It is an area that has received a great deal of attention, Kidwell notes that, "...the military is not well trained nor structures in theatre to manage successfully a private sector presence in their operational areas. Unless they are educated in contract management for this specific purpose, they will not succeed."⁸⁷ The General Accounting Office (GAO) in the US found that Kellogg Brown and Root (KBR) had poor accounting practices and could not provide reasons for \$1.4 Billion US in fees that it was claiming.⁸⁸ Cancian wrote that, "Contracts were poorly structured, improperly priced, and inadequately supervised...by the summer of 2008, government agencies had conducted more than 200 criminal investigations relating to contract fraud in Iraq..."⁸⁹ What is evident from the various articles and sources is that there needs to be dedicated personnel that oversee and manage the contracts, and that they have to be properly trained.⁹⁰ The US has extensive experience with contracting, but even there the full impact of this is not well known, as Kidwell notes, "...the consequences of the extensive privatization of military services to future US overall military effectiveness and mission capability remain unknown – and for now largely ignored."⁹¹

With the US experience in mind, providing contractor oversight is also an issue that Canada will have to deal with. It is not something that is taught during the average officer's training, but it is something dealt with by Supply officers. There is a directorate

⁸⁷ Gour and Hunter, 11.

⁸⁸ Ibid., 14.

⁸⁹ Cancian, 70.

⁹⁰ Ibid., 74.

⁹¹ Kidwell, 5.

within ADM Mat that deals with the procurement of services contracts called the Director General Procurement Services, whose mandate is to provide, "... a centre of expertise in the area of procurement and contract management as well as assistance, guidance and direction to project team and departmental staffs on service delivery activities."⁹² The guidelines for procurement can be found in the Procurement Administration Manual.⁹³ The directorate provides the overall advice and the manual provides the in depth details, but there is no single course that provides any in depth training.

Celine Bedard, the Director of Major Procurement in ADM Mat, indicated that prior to deployment, there was training given to the officers that would be managing the deployed services contracts. However, it is merely a part of their pre deployment training and was not a complete course in contracting. The Supply officers do have some contracting experience but they primarily deal with contractors through Public Works and Government Services Canada (PWGSC), not the actual contractors. The difference being that when the dealings are with an external contractor, they have their commercial interests at heart, not what is best for the military, whereas PWGSC is working for the government and hence the military. Certainly the contractor will propose something and will invariably say, 'yes', of course there is always a price to that. The price is something that can cause problems for the military as there are direct and indirect, or hidden costs that can rapidly escalate the contract beyond its original value. A lack of experience

⁹² Director General Procurement Services Website, http://dgprocsvcs.ottawa-hull.mil.ca/en/about_us_e.asp; Internet; accessed 28 April 2009.

⁹³ Assistant Deputy Minister Material, *Procurement Administration Manual*, (Ottawa: DND Canada, 2008).

dealing with contractors and contracts can cause the hidden costs to be missed and the price of the contract to escalate.

Another oversight pitfall of the contracting process is not being fully aware of the contract and subsequently not fully utilizing it. In the May 2006 status report⁹⁴, the Auditor General of Canada reviewed the progress that the Department of National Defence had made with the NATO Flying Training in Canada (NFTC) and Contracted Flying and Training Support Program (CFTS). The Auditor General had raised concerns about the contracts in 2002 and the status report was initiated to see how the department had fared. In the report the Auditor General noted that even though progress had been made, the contract was not being fully utilized and that the military would be paying for services it had not and would not receive. Even without the urgency of a deployed setting, the military is not particularly adept at contracting and using the contract to its advantage. It must be noted that the Auditor General did indicate that the department had made progress and was getting better.⁹⁵ What is evident in this example is that contracting is complicated and understanding the breath and scope of the contract is vital. This is even more important when dealing with contracted maintenance in a deployed theatre of operations when the successful completion of the mission and lives of soldiers are at stake.

⁹⁴ Office of the Auditor General of Canada. *2006 Status Report of the Auditor General* (Ottawa: Auditor General of Canada, 2006), 75-90.

⁹⁵ *Ibid.*, 88.

4.3 - Dependency Issues

Of the three allies examined in this paper, the US has the greatest experience with contracted maintenance support. As well, it also has the largest standing military and stocks of equipment holdings. Due to this, it does not suffer from the lack of equipment that can plague a smaller military like Canada. Given the size of the US equipment holdings, they have the ability to swap out equipments or units when maintenance issues occur so the loss of a single system may not be critical. Even with that ability, maintenance problems still exists for the US. At present there are 79 C4ISR systems utilized by the US of which 57 are now exclusively maintained by contractors.⁹⁶ From this, it can be seen that the US has accepted that they no longer have the ability to maintain certain types of equipment within the military. With the expense and relative scarcity of that equipment, what happens if the contractor goes on strike, or the equipment fails and there is no replacement? The loss of equipment, such as one of the four Intelligence Gathering Systems Canada holds⁹⁷, due to the inability of a contractor to carry out its duties in accordance with its contract, is something that Canada can ill afford.

In the US Stryker Brigade Combat Team (SBCT) contractors are a vital part of the force. On deployment, “Approximately 120 specialized contractors are an integral part of the SBCTs highly complex systems maintenance, sustainment, and technical

⁹⁶ Aldrete. 9.

⁹⁷ Cooper et al., 20.

support.”⁹⁸ The US Stryker is based on the LAV III chassis and contains many of the same systems as the Canadian LAV III. While the base vehicle is very similar, the maintenance concept differs between the two countries. In Canada, the integral CSS units in the Brigade carry out the first and second line maintenance with no contractor support. An FSR will assist with difficult issues or those that are beyond the integral maintenance units. The LAV III is a very technologically advanced vehicle, but its technical subsystems are not as advanced as those used in the US Stryker. The result is that Canada is not as reliant upon the services of maintenance contractors, a possible benefit when dependency is a concern.

In the US and the UK, contracted maintenance support is now an accepted part of the way that their militaries operate. In Canada, the DND is still teetering on the edge of full acceptance but the institutional resistance is ebbing. If it is accepted that contracted maintenance is here to stay then dependency is one of the issues for the Canadian military that needs to be carefully managed. Based on the demographic trends and technological advances, it is highly likely that the Canadian military will not fully recover the manning and skill levels of its technicians. Because of this, there will likely be a built in dependency upon contractors to provide certain skills. This is a difficult issue for the military as it places constraints upon its freedom of movement and action, a large challenge for an institution that needs to be able to act freely to fulfill its mandate to the country. The constraints come in two forms: the first is a lack of manpower and the second is the inherent lack of flexibility that contractors provide.

⁹⁸ Gregory L. Aldrete. Nonstandard Logistics Sustainment Support in the Stryker Brigade Combat Teams. *Army Logistician* 37. no.2. (March/April 2005): 9.

The German experience in World War II provides an example of the manpower issue. During the war, the Germans had a wide variety of units in the fighting echelons. In an emergency situation when they needed additional fighting troops, they used to draw upon the mechanics, cooks, and drivers etc, to provide an emergency battle group. In the Canadian military, the branch that provides maintenance to land based equipment, less communication and computer systems is the Electrical and Mechanical Engineers (EME). The motto of the EME Branch is *Arte et Marte*, which translates to “by skill and by fighting.”⁹⁹ The branch has prided itself on the ability of its soldier/technicians to act as infantry as required. If those personnel are reduced in number or are no longer there, then the flexibility of the commander has been reduced. If the Army cannot deploy and support its forces without the use of a contractor then its freedom of movement and freedom of action have been constrained. This point is supported by LCol Conrad when he relates the break down of a vehicle in a convoy in Afghanistan and the maintainers using their personal weapons to fight off the attackers so that the vehicle can be repaired and the convoy resume.¹⁰⁰

⁹⁹ DGLEPM Website. “EME Branch Traditions”. Available from [www.dglepm.ottawa-hull.mil.ca/dleps/emebranch/en/eme traditions e.asp](http://www.dglepm.ottawa-hull.mil.ca/dleps/emebranch/en/eme%20traditions%20e.asp) ; Internet; accessed 21 April 2009.

¹⁰⁰ LCol Conrad, “*What The Thunder Said: Reflections of a Canadian Officer in Kandahar*”, (Toronto Ontario, Dundurn Press 2009), 131.

4.4 - Technology Issues

For the countries that can afford to purchase and utilize the latest high tech equipment there are concerns. First, while the US is firmly tied to contractor support for the maintenance of its high tech equipment, not all other countries are. If a country decides to acquire some of the latest American technology then they are going to be firmly tied to the manufacturer for the maintenance support. Given the close relations between the US and the allies that it would be willing to share its newest technology with, it should not be a problem. This leads to two additional concerns: the first is the dependence upon a foreign commercial company to provide maintenance support for critical equipment, and second is the problems that surround source code.

Removal of support for weapons systems was clearly shown in the case of the Indonesia F16 fighters. In 1990, Indonesia was a US ally and was sold a number of F16s. As of 1999, the US no longer supports Indonesia and the F16s are sitting and not airworthy.¹⁰¹ The purchase alone of high tech equipment does not mean that the maintenance support will be there when needed.

The concerns around dependency and source code are shown in the development of the US led Joint Strike Fighter (JSF). In this project, the JSF is primarily being developed in the US, but a number of other countries have signed on as well in an effort to keep the acquisition costs down. The project is American led and they, "...want to

¹⁰¹ Lieven Dewitte, "Turkey Offers Indonesia F-16 Jetfighter Mainenance" Available from http://www.f-16.net/news_article1765.html ; Internet; accessed 28 April 2009.

keep aspects of the technology of the JSF secret making it difficult for their allies to do maintenance and repair on the fighter jets themselves.”¹⁰² The impact is that if a component of the secret technology needs repair, then the allies would be waiting in line behind the various US services using the JSF for repairs. Further exacerbating the issue, the allied buyers would be dependent upon Lockheed Martin for maintenance of the JSF, and as an American company, Lockheed Martin owes its first allegiance to the country that it depends upon for the vast majority of its work, the US. It is here where the consolidation of the defence industry is very notable. If the Americans decided to withdraw their support of the JSF, then the allies could be left with very expensive unserviceable aircraft sitting on a tarmac.

Further complicating the dependency issue is that of source code. The source code is the lines computer codes that allow the aircraft to fight and fly. In the case of the JSF, there will be some 19 million lines of software code.¹⁰³ The access, or lack of access, to the codes is becoming a critical issue to a number of the countries that have signed up for the fighter. Without access, they will not be in a position to independently maintain the aircraft and will be at the mercy of Lockheed Martin and the US. In countries without a strong background in contracted maintenance, such as Australia, this single issue threatens to derail the entire project. What complicates the problems around source codes is what is contained within the code. It would be very simple to program a kill switch within the software; a command that when activated renders the weapons

¹⁰² Krishnan, 166.

¹⁰³ Alex Tewes, “The F-35 (Joint Strike Fighter) Project: Progress and Issues for Australia” Available from <http://www.apf.gov.au/library/Pubs/RN/2005-06/06rn32.pdf> ; Internet; accessed 28 April 2009.

system inoperable.¹⁰⁴ It is not a far fetched scenario at all as the US did not anticipate that they would place an arms embargo on Indonesia a mere ten years after they had sold them the F-16. Had the Americans considered this as a possibility, then they would most certainly not have sold Indonesia the sophisticated fighters in the first place. It is conceivable given how quickly alliances shift between countries that today's friend could be tomorrow's foe. Consider the case of Poland; in 1988 it was a member of the Warsaw Pact and by 1999 it was a member of NATO. It is unlikely that any arms producing country would want to face their own sophisticated equipment in battle, so the worries that surround source code and maintenance dependency are justified.

A positive aspect to the use of maintenance contractors is the elimination of some of the issues surrounding spare parts. The maintenance contractor in most cases will be a subsidiary of a parent company that has large commercial interests. In the 2002 Chief Review Staff (CRS) Audit of material support to deployed operations, it was noted that despite the efforts and resourcefulness of Canadian technicians in finding workarounds, there were still risks with respect to the provision of parts.¹⁰⁵ In the Canadian context, much of the fault lies within the exceptionally difficult acquisition system that the CF has to deal with. It can take months or in extreme cases, years, to purchase the parts necessary to stock the system.¹⁰⁶ Deployed operations are always a high priority for the provision of parts, but if they are not within the system, then there are three choices: remove from another piece of equipment, swap the equipment out with another in theatre

¹⁰⁴ Krishnan. 167.

¹⁰⁵ Department of National Defence, *7053-53(CRS) Audit of Material Support to Canadian Forces Deployed Operations*, (Ottawa: DND, 18 Oct 2002), 1.

¹⁰⁶ Cooper, et al., 20.

or, do without. Depending upon how critical the failed piece of equipment is, these choices can have the result of degrading operational effectiveness. The advantage that a maintenance contractor has in this particular scenario is that apart from having to remain within the parameters of their contract, they do not have to deal with the government acquisition system. An even greater benefit is derived when the deployed maintenance contractor is also part of the OEM.

The example noted previously of the US C4ISR equipment maintenance can be looked at as a window into the larger maintenance issue that the RMA has wrought. The US is the largest producer and exporter of military equipment in the world.¹⁰⁷ Hand in hand with this dominance is the edge in technology. The US develops and produces the most sophisticated weapons systems in the world, in particular precision guided munitions, communications systems and information technology.¹⁰⁸ The US has relied upon its technology to keep itself at the head of the pack in the development of weapons systems. This dominance is a result of the immense amount of research and development that the US undertakes. As noted earlier, the greater the advances in technology, the greater the reliance upon contracted maintenance.

The US has fully embraced Network Centric Warfare (NCW) and the drive towards it is very expensive. That expense has put fully embracing NCW out of the reach of some of their traditional allies, such as Canada and some of the NATO

¹⁰⁷ Stockholm International Peace Research Institute (SIPRI), *SIPRI Yearbook 2005: Armaments, Disarmaments and International Security*, (Toronto: Oxford University Press, 2005), 318.

¹⁰⁸ R.E. Harkavy and S.G. Neuman, *Warfare and the Third World*, (New York: Palgrave, 2001): 303.

countries.¹⁰⁹ For the US, NCW is their vision of the future for the military and a method of transformation that will take them there. The sophisticated high tech weapons platforms that the US is developing are the preferred choice of its allies. However the expense and issues that surround their use, such as the requirement for contractor maintenance, are placing a potential divide between the allies.

¹⁰⁹David Detomasi “The New Public Management and Defense Departments: The Case of Canada.” *Defense & Security Analysis*, Vol.18, no.1 (2002): 64.

4.5 - Command Issues

A concern noted by Kolling, Ross and Spoon is that, "...current outsourcing initiatives are being conceived and implemented under conditions of peacetime engagement or operations other than war. There may be serious implications for the execution of outsourced functions if they must be performed forward in a theatre of operations, under the higher threats associated with a major theater war."¹¹⁰ While there are numerous conflicts ongoing in the world and some of the recent conflicts have been intense, such as the Iraq conflict, none have produced the theatre of operations described above, and contractors have operated successfully in a wide variety of conditions in the Balkans, both Gulf Wars, Iraq and Afghanistan. The end of the Cold War removed the threat of a major power conflict and in that absence the concern can be viewed as somewhat moot. Nonetheless, it is still a factor that deserves consideration by planners at the strategic level.

There are both positives and negatives to the employment of contracted maintainers. One of the negatives is that maintenance contractors may need to utilize scare force protection personnel thereby drawing them away from other tasks. This issue is particularly problematic when the threat levels in the theatre are high. If a contractor is required to deploy from the secure base camp, they will require force protection assets to escort them to their task and protect them while they complete that task. LCol John Conrad in his book, *What The Thunder Said*, noted that, "Just as the U.S. Army has

¹¹⁰ Lt Col James Kolling et al., Potential Combat Risks From outsourcing of Selected Sustainment Functions," (Carlisle: United States Army War College War College Course Paper, 1998), v.

discovered in Iraq, we have learned that you can't get combat arms soldiers to escort logistics columns. There simply aren't enough armoured and infantry soldiers to do it."¹¹¹

What makes this comment telling is that LCol Conrad is not discussing protecting unarmed maintenance contractors but the need for force protection for armed CSS elements.

A final subject to be considered is that maintenance contractors are not under the command of the onsite commander and as they are not under the chain of command, they cannot be compelled to enter harms way. Outside of the penalties written within the contract, the onsite commander has no legal authority over the maintenance contractor. There are several ramifications to this issue. First, in the event of a withdrawal of services, the commander cannot compel the contractor personnel to work. Second, in the event of a disciplinary infraction, the contractor does not fall under the code of military conduct. Unless the infraction involves breaking Canadian Law, in which case police can charge the individuals, the military commander has no disciplinary authority. Unless war is declared, the issues raised here cannot be altered. Even if war is declared, attempting to force civilian technicians into harms way is fraught with problems. For the onsite commander, it becomes an issue of awareness and management instead of command.

For Canada, one of the issues that the military must be wary of is how far down the road to contracting should military go? At what point does the drive to contracting begin to affect the operational effectiveness of the military, particularly in deployed operations? When this is examined from the maintenance perspective, it can be argued

¹¹¹ LCol John Conrad, 184

that we are not that far from that point now. In the case of Canada, one need only examine the issue of the FSR for the APVs in Afghanistan. The APV was a new vehicle and there were no technicians trained in their repair and the FSRs were not deployable forward. Fortunately for the onsite commanders, the vehicles were not extremely high tech and the average vehicle technician deployed in a forward operating base could repair them. The precedent, however, has been set and what will the impact be when the next piece of high tech kit comes online that cannot be adequately supported by the army's technicians? What happens when that piece of equipment breaks down in the heat of an operation and cannot be repaired without recovery back to the secure base? Is this the point where the operational effectiveness of the unit has been compromised? Certainly in the case of Canada, the issue needs to be watched much closer than it would with some of its allies. The Canadian military is quite small and her army in particular is very small, and as such, units can be quickly rendered operationally ineffective when their equipment is not serviceable.

Canada cannot afford to ignore any of the concerns noted in this chapter. As the oversight experiences with the CANCAP and underutilization of the NFTC contracts have shown, Canada is far from being perfect with respect to its contracting practices. The size of the CF and its equipment holdings renders it extremely vulnerable to dependency issues. Further, Canada has continued its interest in the JSF and a project that has greatly concerned Australia.¹¹² Given the similar sizes of the Australian and

¹¹² Canada. Department of National Defence, ADM Mat Website. "*Joint Strike Fighter*" Available from <http://www.forces.gc.ca/admmat-smamat/jsf-jsf-eng.asp> ; Internet; accessed 09 December 2009

Canadian militaries, Canada would be well advised to heed the Australian concerns on technology and source codes.¹¹³

¹¹³ Tewes, 1.

CHAPTER 5 - FUTURE THOUGHTS

There is no doubt that contractors can tremendously augment deployed military forces and can act as a force multiplier. However, as also shown the over reliance upon contractors can build dependency which for Canada has tremendous risks of constraining a commanders freedom of action. With this is mind, there are several areas that should be observed and studied for future contracting activities.

The first is that there needs to be an overall consolidated plan for contracted maintenance support that is part of a coordinated master plan. An in depth analysis of the CF's requirements needs to be conducted in conjunction with the overall future force structure. The approach that Canada has typically taken is a reactionary one; the contracting has occurred as a result of situations, such as the aftermath of the FRP when there were insufficient CSS personnel to continue the operations in the Balkans. Forethought and the involvement of the Chief of Force Development (CFD) whose expertise in the future security environment can help shape the CF's CSS needs. Once the future direction of the CF is known and the composition of the CSS elements are stated, according to the future security plans, the contracting requirements for various security scenarios can be developed into a coherent plan.

In the aftermath of the full study, a detailed policy on the employment of maintenance contractors needs to be developed. In this high tech age, it is clear and must be accepted that maintenance contractors are here to stay, and military planners need to

accordingly adjust their thoughts. The policy will provide the military planners with the parameters that they need for the inclusion of contracted maintenance personnel into the mission planning.

Doctrine on the utilization of contractors needs to be developed; just as doctrine is adjusted when there is a change to force structure or with the development of new weapons systems. It is likely the contracted maintenance support will impact all future military operations so doctrine should be developed to assist with this. In particular, doctrine will clarify the use of maintenance contractors in the various permissive and non permissive environments that the CF operates in.

In the case of critical positions that are being carried out by contracted maintenance personnel, or where critical weapons systems are being maintained, contingency plans must be developed in the event of a withdrawal of services. For those systems that are so critical that the loss of a system due to maintenance problems would endanger the mission, then military maintainers should be trained and prepared to assume the function being performed by the contractor.

Officers that are tasked to carry out contract management must be given the training that imparts the skills and knowledge that they will need to provide proper oversight to the contracts and contractors. It is insufficient to rely upon a short period of training during pre-deployment training to provide an individual with the requisite skills

to manage multi million dollar contracts. As shown in the US experience, specialist training in deployed contracting is necessary.¹¹⁴

Contractors must not be used to replace force structure. If they are properly used, there are tremendous benefits to the mission. However, relying upon contractors as part of the force structure is like living in a house of cards. The risks to the mission and the personnel are too high given that the maintenance contractor has the ability to stop production without the on scene commander being able to intervene. As well, the nature of business is about profits and the business ethos and that of the militaries do not match.

Maintenance contractors and their parent companies or subsidiaries must have their ongoing activities screened to determine if those activities run counter to any Government of Canada ethical rules and regulations.

A tremendous amount of research has gone into the topic of military contractors. The companies themselves that are involved have even set up a website to promote their activities, complete with sections for research, legal aspects, companies for hire, and the list goes on.¹¹⁵ Notwithstanding the work that has been done, there are still areas that Canada needs to be aware of. The CF has experience in maintenance contracting, but as it has shown with some of its contracting mistakes, there is still room for improvement.

¹¹⁴ Goure and Hunter, 16.

¹¹⁵ Private Military.Org, "Private Military and Private Security Companies."
<http://www.privatemilitary.org> ; Internet; accessed 09 December 2009.

CHAPTER 6 – CONCLUDING REMARKS

The end of the Cold War brought numerous changes to the world. The threat of conflict between the two superpowers was diminished, but so was their control over the world. Accompanying the end of the Cold War was the demand by society that the vast military spending that went hand in hand with the, Cold War end, and the Peace Dividend was born. The aim of the Peace Dividend was to shift the funds that had been spent on the military to the economy and improve the welfare of the countries' citizens. Wanting to preserve their core capabilities, the US, UK, and Canadian militaries pruned their personnel back with the CSS personnel taking a large share of the reductions. The reasoning for this was that the militaries would not be fighting large set piece battles and so would not require the traditional Cold War levels of service support. With the budgetary reductions in place, the militaries downsized and cut back, but the expected reduction in the level of operational activities did not decrease.

In what can only be described as a conjunction of events, the US, UK, and Canada all faced similar pressures with the end of the Cold War; the demographics of falling birth rates, a decrease in personnel that wanted to enter the military and a rapid escalation in military technology, all of which were accompanied by an increase in operational tempo. In these three countries, the pressures pushed the militaries to the point where contractors and contracted maintenance technicians had to be used to support the military. The US, with the largest requirement, was also the first off the mark to move into contracted maintenance support.

With the introduction of the M1 MBT, the US for the first time accepted contractors as part of their force structure. From that point forward, the US fully embraced the rapid escalation of technology known as the RMA. With the RMA, the US discovered that they actually needed fewer personnel to operate their new weapon systems, but that they also required additional maintenance personnel, the same personnel that had been cutback. Seeing the opportunity to diversify their profiles, the various defence manufacturers began to offer ISS to maintain some of the weapons systems critical to the conduct of operations.

In the UK, similar events were unfolding, if not at the same rate. The NPM belief in the UK was that private industry would be able to provide the support services that the military needed at a lower cost. This combined with the Peace Dividend was the impetus for the UK military to start dealing with military contractors. As the UK military modernized, it also moved down the road towards the high tech weapons platforms that the US were using, with the same results - a requirement for technicians that were no longer available. While the three factors noted in this paper were all important in the UK, it was the strongly held belief in the private sector that was the main factor in the UK moving to contracted maintenance support.

In Canada, the same three factors applied but the budgetary restrictions were the critical factor. The 23 percent reduction in defence spending between 1992 and 1998 led to the FRP that decimated the ranks of the technical and support trades. The 1994 White Paper and the intensity of the operational tempo in the Balkans led the military to realize

that it required contractor support. From this nascent step, the Canadian requirement grew to the point where CANCAP is now a factor in all deployments.

Accompanying the rise of the contracted maintainer are some issues that Canada needs to either be wary of or study further. As the Canadian military is not particularly large and the equipment holdings are correspondingly small, with very little held in reserve, the issue of dependence plays a role. Missions cannot be held hostage to the loss of critical equipment due to the maintenance contractor not meeting their obligations or work stoppages. Dependency upon a maintenance contractor removes flexibility from the Commander and should be avoided. Further, the advanced weapons systems that are now being produced, such as the JSF, are so reliant upon computers that the access to the proprietary source codes may now prevent some countries from purchasing the platforms.

As the US has learned, proper oversight and contract management are critical to the success of the mission. Despite its relatively small contracting record, Canada has already had its share of contracting miscues with the NTFC, Cormorant and Afghanistan CANCAP amendments. Learning from these mistakes is important and Canada needs to improve its contract management and contract utilization. Along similar lines, the other activities of the contracted maintenance company and its possible parent corporation need to be monitored as was shown by the Blackwater incident in Iraq.

Without doubt, the avalanche of rapid advances in technology will continue gaining momentum. When this is combined with demographic trends that are adverse to

recruiting, the movement towards contracted maintenance support will continue to grow. Some of the weapons systems now in use are totally supported by contractors and Canada's two largest allies are firmly entrenched in their utilization of contracted maintenance. While the militaries derive benefits from these arrangements, they also accept risk.

For Canada, "The bottom line is that there is no going back to the days of fairly self-contained, vertically integrated military industrial base and support supply chain. There is no intention to increase the size of the armed forces sufficiently so as to obviate the need for contractors on the battlefield (COB). Contractors are now an integral and permanent part of battlefield logistics and support. ... The issue is how to manage this presence to the greatest benefit..."¹¹⁶

¹¹⁶ Goure and Hunter, 2.

BIBLIOGRAPHY

- Adams, Thomas K. "The New Mercenaries and The Privatization of Conflict." *Parameters*, vol. 29, issue. 2 (Summer 99): 103-117.
- Addison, Timothy H. "Contractors on The Battlefield: Have we Done our Homework?" Toronto: Canadian Forces College Advanced Military Studies Course Paper, 2001.
- Aldrete, Gregory L. "Nonstandard Logistics Sustainment Support in the Stryker Brigade Combat Teams," *Army Logistician* 37, no. 2 (Mar-Apr 2005): 6-10.
- Antonyshyn, David. and Jan Grofe., and Don Hubert. *Beyond The Law? The Regulation of Canadian Private Military and Security Companies Operating Abroad.* National Reports Series 03/09 Prepared for Priv-War National. Ottawa: University of Ottawa, 12 February 2009.
- Auer, Catherine. "In It For The Money," *Bulletin of The Atomic Scientists*, vol.60, issue 2 (Mar-Apr 2004): 42-43.
- Ayers, Richard. "UK Military Tightens its Belt in the Balkans." *BBC News Online*, (news on-line); available from http://www.news.bbc.co.uk/2/hi/uk_news/323900.stm ; Internet; accessed 28 November 2009.
- Barker, LCdr Macarena and Hatton, Capt Pam. "Contractors in Support of Operations: A Canadian Perspective", *PASOLS LOG*, 10, (August 2000.): 12-14.
- Blizzard, Stephen, M. "Increasing reliance on Contractors on the Battlefield: How Do We Keep From Crossing The Line?" *Air Force Journal of Logistics*, 28, no. 1 (Spring 2004): 4-14.
- Boessenkool, Antoine, "Contractors Surge To Record Numbers in Afghanistan," *Defense News*, (journal on-line); available from <http://www.defensenews.com/story.php?i=4286204>; Internet; accessed 20 November 2009.
- Bonn International Center for Conversion. Conversion (BICC), BICC Survey 2004: Global Disarmament, Demilitarization and Demobilization. (Baden-Baden: Nomos Verslagsgesellschaft, 2004).
- Boot, Max. "The New American Way of War," *Foreign Affairs*, vol.82, issue 4 (July-Aug 2003): 41-58.

- Boot, Max. "The Struggle to Transform The Military," *Foreign Affairs*, vol.84, issue 2 (March-Apr 2005): 103-116.
- Brewster, Murray. "DND Looks at Buying Light Tanks to Replace Battered Afghan Fleet" *Canadian Press*, 26 May 2009.
- Brown, Major Sylvester H. "Using Third-Party Logistics Companies," *Army Logistician* 31, no 6 (Nov-Dec 1999): 18-23.
- Cameron, Lindsey. "Private military companies: their status under international humanitarian law and its impact on their regulation." *International Review of The Red Cross*, vol.88, no. 863 (September 2006): 573-598.
- Camm, Frank and Victoria A Greenfield. *How Should the Army Use Contractors on the Battlefield?* Santa Monica CA: Rand Corporation, 2005.
- Campbell, G.L. "Contractors on the Battelfield: The Ethics of Paying Civilians to Enter Harm's Way and Requiring Soldiers to Depend on Them." Paper presented at the Joint Services Conference on Professional Ethics, Springfield VA. January 2000.
- Canada. Department of National Defence, ADM Finance and Corporate Services Website. "2008-2009 Cost Factors Manual" available from http://admfinccs.mil.ca/subjects/fin_docs/cfm_08/cfm08_e.asp ; Internet: Accessed 25 May 2009.
- Canada. Department of National Defence, ADM Mat Website. "Joint Strike Fighter" available from <http://www.forces.gc.ca/admmat-smamat/jsf-jsf-eng.asp> ; Internet; Accessed 09 December 2009.
- Canada, Department of National Defence, ADM Pol Website. *The 1994 White Paper on Defence*, available from <http://www.forces.gc.ca/admpol/newsite/downloads/1994%20White%20Paper%20on%20Defence.pdf>; Internet: Accessed 18 Nov 09.
- Canada. Department of National Defence, Asst CMS Website, "Concept of Operations", available from http://navy.dwan.dnd.ca/english/asstcms/dmpor/Docs/Coastal/Repository/KIN_C_LASS/CONOPS_jun98/KINGSTON_COO.doc.; Internet; accessed 10 June 2009.
- Canada. Department of National Defence. B-GL-314-008/AM-002 *The EME Handbook*, Ottawa: DND Canada, 1995.
- Canada. Department of National Defence. C-04-005-055/JS-001 *Maintenance Policy: Guide For The Design of Land Maintenance Workshops*, Ottawa: DND Canada, 1995.

- Canada. Department of National Defence. *7055-29(DGA) Audit of Force Reduction Programs*, Ottawa: DND, Jan 1997.
- Canada. Department of National Defence. *7053-53(CRS) Audit of Material Support to Canadian Forces Deployed Operations*, Ottawa: DND, 18 Oct 2002.
- Canada. Department of National Defence. *TFA-KFA CANCAP TASK ORDER*, Ottawa: DND Canada, Jul 2006-February 2007.
- Canada. Department of National Defence, CEFCOM Website. “*Logistics CONOPS*”. available from <http://cefc.com.mil.ca/sites/page-eng.asp?page=3757>. ; Internet; accessed 01 Jun 2009.
- Canada. Department of National Defence, DGLEPM Website. “*EME Branch Traditions*”. Available from [www.dglepm.ottawa-hull.mil.ca/dleps/emebranch/en/eme traditions e.asp](http://www.dglepm.ottawa-hull.mil.ca/dleps/emebranch/en/eme%20traditions%20e.asp) ; Internet; accessed 21 April 2009.
- Canada. Department of National Defence, DGMEPM Website. *Minor Warships and ISSC*, available from <http://dgmepm.ottawa-hull.mil.ca/dmcmoux/mwissc.asp> ; Internet; accessed 10 June 2009.
- Canada. Department of National Defence, DG Proc Svc Website. Available from http://dgprocsvcs.ottawa-hull.mil.ca/en/about_us_e.asp; Internet; accessed 28 April 2009.
- Canada. Department of National Defence. *DRDC CORA TM 2008 On the Availability of the CH149 Cormorant Fleet in an Ideal Sparing Situation*. Toronto: DRDC June 2008.
- Canada. Department of National Defence. *Procurement Administration Manual*, Ottawa: DND Canada, 2008.
- Canada. Department of Justice. *Canada Labour Code (R.S., 1985, c. L-2)*; available from <http://laws.justice.gc.ca/en/L-2/text.html>; Internet; accessed 27 November 2009.
- Canada. Minister of Supply and Services. *Challenge and Commitment: A Defence Policy for Canada*. Ottawa: Canada June 1987.
- Canada. Office of the Auditor General of Canada. *2001 Report of the Auditor General* Ottawa: Auditor General of Canada, 2001.
- Canada. Office of the Auditor General of Canada. *2006 Status Report of the Auditor General* Ottawa: Auditor General of Canada, 2006.

- Canada. Treasury Board of Canada Secretariat Website. "Policy on Title to Intellectual Property Arising Under Crown Procurement Contracts" available from <http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=13697§ion=text#chaintro>; Internet; accessed 12 May 2009.
- Cancian, Mark. "Contractors: The New Element of Military Force Structure," *Parameters*, 38, no. 3 (Autumn 2008): 61- 77.
- Cardinali, Richard. "Does the future of military logistics line in outsourcing and privatization? Accountants – the new gatekeepers of war-time operations," *Work Study*, 50, no 3 (2001): 105-110.
- Chalmers, Malcolm. "Preparing for the Lean Years." Future Defence Review Working Paper 1. London: Royal United Services Institute for Defence and Security Studies, RUSI, July 2009.
- Cockayne, James. "The global reorganization of legitimate violence: military entrepreneurs and the private face of international humanitarian law." *International Review of The Red Cross*, vol.88, no. 863 (September 2006): 459-490.
- Conrad, LCol John. "What The Thunder Said: Reflections of a Canadian Officer in Kandahar", Toronto Ontario, Dundurn Press 2009.
- Cooper, Barry. and Mercedes Stephenson and Ray Szeto. *Canada's Military Posture An Analysis of Recent Civilian Reports*. Report Prepared for The Fraser Institute. Vancouver: The Fraser Institute January 2004.
- Cottier, Michael. "Elements for contracting and regulating private security and military companies." *International Review of The Red Cross*, vol.88, no. 863 (September 2006): 637-663.
- CTV.Ca News Staff. "Canada's birth rate falls to record low: StatsCan," available from http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/1082386025485_10/; Internet: accessed 18 November 2009.
- Demchak, C.C. "Complexity, Rogue Outcomes and Weapons Systems", *Public Administration Review*, 52, no.4 (July/August 1992): 347-356.
- Detomasi, David. "The New Public Management and Defense Departments: The Case of Canada." *Defense & Security Analysis*, vol.18, no.1 (2002): 51-73.
- Dewitte, Lieven. "Turkey Offers Indonesia F-16 Jetfighter Maintenance" available from http://www.f-16.net/news_article1765.html; Internet; accessed 28 April 2009.

- Dibble, George B., Charles L. Horne, III, and William E. Lindsay. *Army Contractors and Civilian Maintenance, Supply and Transportation Support During Operations Desert Shield and Desert Storm. Volume 1: Study Report AR113-01RD1.* Logistics Management Institute, Bethesda, MD: June 1993.
- Dombrowski, P.J, Gholz, E, and Ross, A.L. *Military Transformation and the Defence Industry After Next the Defense Industrial Implications of Network Centric Warfare*, Newport: Naval War College Press, 2003.
- Elvish, Major, R.A. "Alternative Service Delivery to Deployed Operations." Toronto: Canadian Forces College Command and Staff Course New Horizons Paper, 1999.
- Emke, Jerry. "Climate Change, Demographics, Technology, and Globalization: Their Impact on the Acquisition Community." *Defence AT&L*, (March-April 2008): 35-37.
- Fishman, Charles. *The War For Talent*, Fast Company.Com, available from www.fastcompany.com/magazine/16/mckinsy.html ; Internet; accessed 23 April 2009.
- Fortner, Joe A, and Jaeckle, Ron. "Institutionalizing Contractors on the Battlefield," *Army Logistician* 30, no. 6 (Nov-Dec 1998): 11-13.
- Goure, Dr Daniel and Hunter, Carrie. *Contractors on the Battlefield: A Support Force to Manage*, A report prepared for The Lexington Institute, Arlington Virginia, Feb 2007.
- Hartley, Professor Keith. *UK Defence Spending*, (Lancaster and York: Defence Research Institute, 2001).
- Haulk, Keith B. and Greg H. Parlier. "Recruiting: Crises and Cures", *Military Review* vol. 80, no. 3 (May-Jun 2000): 73-80.
- Hobbs, Major Chuck. "Contractors on the Battlefield – Not a Silver Buller." Toronto: Canadian Forces College, Masters Thesis, 2001.
- Hope, B.W. "Contracting out Logistics Support: The Smart Move?" Toronto: Canadian Forces College Command and Staff Course New Horizons Paper, 1990.
- Jensen, J.R. "Civilian Contractors on Deployed Operations: An Enabler for the Canadian Forces." Toronto: Canadian Forces College Command and Staff Course New Horizons Paper, 2006.
- Kellen, Maryellen R, and Todd A. Watkins. "The Myth of The Specialized Military Contractor," *Technology Review*, vol.98, issue, 3 (Apr 1995): 52-59.

- Kidwell Deborah C. *Public War, Private Fight? The United States and Private Military Companies*, Global War on Terrorism Occasional Paper 12. Fort Leavenworth Kansas: Combat Studies Institute Press, 2005.
- Kolling, Lt Col, James G, LTC Ross, B, and LTC Spoon, T. *Potential Combat Risks From Outsourcing of Selected Sustainment Functions*, Carlisle: United States Army War College, 1998.
- Krahmann, Elke. "Security Governance and the Private Military Industry in Europe and North America." *Conflict, Security & Development*, 5:2 (August 2005): 247-268.
- Krishnan, Armin. *War as Business: Technological Change and Military Service Contracting*. Aldershot: Ashgate Publishing Limited, 2008.
- Latham Jr, William C. "Not My Job: Contracting and Professionalism in the U.S. Army." *Military Review*, vol. 89, issue 2 (Mar-Apr 2009): 40-49.
- Lauzon, Anh, Thu. "Intellectual Property History" email to Author, Dated 22 April 2009.
- LeFort, Major D.E. "Civilian Contractors on The Battlefield: An Alternative to Military Logistic Forces." Toronto: Canadian Forces College Command and Staff Course New Horizons Paper, 1998.
- Livingston, J. Sterling. "Weapon System Contracting," *Harvard Business Review*, vol. 37. issue. 4 (Jul-Aug 1959): 83-92.
- Lusser, Frances and Vines, JoAnn. *An Analysis of the Army's Force Structure: Summary*, A memorandum prepared for the Congressional Budget Office, Washington D.C., April 1997.
- Malkinson, Larry. "Outsourcing the Pentagon: Who Benefits From the Politics and Economics of National Security." Report for The Centre for Public Integrity, 29 Sept 2004. available from www.publicintegrity.org/pns ; Internet, accessed 29 May 2009.
- Mahnken, Thomas G. "The American Way of War in The Twenty-First Century." in Efraim Inbar, ED., *Democracies and Small Wars*. London: Frank Cass and Company Limited, 2003, pp73-84.
- Marsman, Colonel Steven C. "Recruiting For 2030 Is The US Air Force Getting The Recruits It Needs For The Future." *Air & Space Power Journal*, (Fall 2009): 42-49.
- McCarthy, D. "Contractors on the Battlefield: A Risky Proposal?" Toronto: Canadian Forces College Command and Staff Course New Horizons Paper, 2000.

- Mozgovaya Natasha. "U.S. Offers Citizenship in Return for Military Service." *Watching America* (on-line site); available from <http://watchingamerica.com/News/20784/us-offers-citizenship-in-return-for-military-service/>; Internet; accessed 26 November 2009.
- Newsweek. "Helicopter Shortage: State Department Fumbles Effort to Oust Blackwater From Iraq." available from <http://blog.newsweek.com/blogs/declassified/archive/2009/11/05/helicopter-shortage-state-department-fumbles-effort-to-oust-blackwater-from-iraq.aspx>; Internet; accessed 23 Nov 2009.
- Nobles, Danny G. "Transforming The Army Sustaining Base" Chap. 9 in *Army Transformation: A View From The U.S. Army War College* (Carlisle: U.S. Army War College, Pennsylvania, 2001).
- Palmer, Herman T. "More Tooth, Less Tail: Contractors in Bosnia," *Army Logistician* 31, no. 5 (Sept-Oct 1999): 6-9.
- Perry, David. "Contractors in Kandahar, eh? Canada's 'Real' Commitment to Afghanistan", *Journal of Military and Strategic Studies*, vol.9. issue 4 (Summer 2007): 1-23.
- Pfanner, Toni. "Interview With Andrew Bearpark." *International Review of The Red Cross*, vol.88, no. 863 (September 2006): 449-456.
- Private Military.Org, "Private Military and Private Security Companies." Available from <http://www.privatemilitary.org> ; Internet; accessed 09 December 2009.
- Quester, George, H. "Demographic Trends and Military Recruitment: Surprising Possibilities." *Parameters*, vol. 35. issue 1 (Spring 2005): 27-40.
- Record, Jefferey. "Failed States and Casualty Phobia: Implications for force Structure and Technology Choices." Occasional Paper No.18, Center for Strategy and Technology, Air War College, Air University Maxwell Air Force base, Alabama, September 2000.
- Record, Jefferey. "Collapsed Countries, Casualty Dread, and the New American Way of War." *Parameters*, 32:2 (Summer 2002): 4-23.
- Ross, Lieutenant Colonel Blair. A, and Spoon, Lieutenant Colonel Terrance J. "Potential Combat Risks From Outsourcing of Selected Sustainment Functions." United States Army War College Paper, 1998.
- Scales Jr, Major General Robert H. *Future Warfare Anthology: Revised Edition*. U.S. Army War College: Carlisle Barracks, Pennsylvania, 2001.

- Schwartz, Nelson D. and Noshua Watson. "The Pentagons Private Army," *Fortune*, vol. 147, issue 5 (March 17, 2003): 100-106.
- Schindlmayr, Thomas. "Future Personnel: Where Will They Come From?" *Defense & Security Analysis*, vol. 18, issue 1 (March 2002): 85-88.
- Semianiw, Major General W. "Chief Military Personnel Address to Joint Command Staff Program 35." (lecture, Canadian Forces College, Toronto, ON, 8 Dec 2008) with permission.
- Shadwick, Martin. "Procurement and the White Paper: Prospects and Pitfalls" *Canadian Defence Quarterly*, (June 1995): 28-35.
- Shadwick, Martin. "The Cyclone Chronicles," *Canadian Military Journal* 5. no.3. (Autumn 2004): 70-71.
- Shadwick, Martin. "Search and Rescue Redux," *Canadian Military Journal* 9. no.1 (Spring 2008): 102-104.
- Singer, P.W. *Corporate Warriors: The Rise of the Privatized Military Industry*, Cornell University Press: New York, 2003.
- Spearin, Christopher. "Not a 'real state'? Defence Privatization in Canada." *International Journal*, (Autumn 2005): 1093-1111.
- Spearin, Christopher. "The International Privatization of Security: Implications for Canada." (on-line); available from <http://www.cpsa-ascp.ca/papers-2008/Spearin.pdf>. ; Internet; accessed 24 November 2009.
- Stockholm International Peace Research Institute (SIPRI). *SIPRI Yearbook 2001: Armaments, Disarmaments and International Security*, New York: Oxford University Press, 2001.
- Stockholm International Peace Research Institute (SIPRI). *SIPRI Yearbook 2005: Armaments, Disarmaments and International Security*, Toronto: Oxford University Press, 2005.
- Speech By UK Minister of State for the Armed Forces John Spellar, Royal United Services Institute, February 8, 2000, cited in Mathew Uttley, "Contractors on Deployed Military Operations: United Kingdom Policy and Doctrine, September 2005.
- Taylor, Trevor. "Contractors on Deployed Operations and Equipment Support" *Defence Studies*, 4, no. 2 (summer 2004): 184-198.

- Tewes Alex. "The F-35 (Joint Strike Fighter) Project: Progress and Issues for Australia" available from <http://www.aph.gov.au/library/Pubs/RN/2005-06/06rn32.pdf> ; Internet; accessed 28 April 2009.
- Townsend, Mark. Army Faces Massive Manpower Shortage, *The Observer*, 5 March 2006.
- Turner Maj Lisa L. and Norton Maj Lynn G. "Civilians at the Tip of the Spear," *The Air Force Law Review*, no 51 (Spring 2001): 1-110.
- United Kingdom, Ministry of Defence. "Operations in Iraq: Lessons for the Future", Directorate General Corporate Communications, London July, 2003.
- United Kingdom, Ministry of Defence, Joint Doctrine Publication 0-01.1, *United Kingdom Glossary of Joint and Multinational Terms and Definitions 7th ed.*, Shrivenam, UK. 20 September 2006.
- United States of America. Department of the Army. FM 3-100.21, *Contractors on the Battlefield*, Washington D.C. DOA USA, January 2003.
- United States of America. Department of the Army. FM 4-100.2, *Contracting Support on the Battlefield*, Washington D.C. DOA USA, March 2000.
- United States of America, Department of the Army. FM 100-10.2, *Contracting Support on The Battlefield*, Washington: Headquarters Department of the Army, 1999.
- United States of America, Army Material Command. *Logistics Civil Augmentation Program*, Washington: Headquarters Department of the Army, 1985
- United States of America, Army Material Command. *Logistics Civil Augmentation Program: Operation Joint Endeavour*, Alexandria: United States Army Audit Agency, 1996.
- United States of America, Government Accountability Office. *Defense Budget: Trends in Operation and Maintenance Costs and Support Services Contracting*, Washington: U.S. Government Printing Office, May 2007.
- Uttley, Matthew. "Contracting-Out and Market-Testing in the UK Defence Sector: Theory, Evidence and Issues." *Public Money & Management*, vol. 13. issue 1 (Jan-Mar 1993): 55-60.
- Uttley, Mathew. "Contractors on Deployed Military Operations: United Kingdom Policy and Doctrine", Strategic Studies Institute United States Army War College. September 2005.

- Uttley, Matthew. "Private Contractors on Deployed Military Operations: Inter-Agency Opportunities and Challenges", Heritage Lecture 972 delivered 15 June 2006. available from, www.heritage.org/research/nationalsecurity/h1972.cfm ; Internet; accessed 21 November 2009.
- Wilson, Jamie. "US Lowers Standards in Army Numbers Crisis." *The Guardian* (newspaper on-line); available from <http://www.guardian.co.uk/world/2005/jun/04/usa.jamiewilson/> ; Internet; accessed 28 November 2009.
- Winslow, Donna. "Canadian Society and its Army," *Canadian Military Journal* 4, no.4 (Winter 2003-2004): 11-23.
- Zamparelli, Steven J. "Contractors on the Battlefield: What Have we Signed up For?" *Air Force Journal of Logistics* 23, no 3 (Fall 1999): 9-17.