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# *The Claxton Papers*

The Queen's University Defence Management Studies Program (DMSP), established with the support of the Canadian Department of National Defence (DND), is intended to engage the interest and support of scholars, members of the Canadian Armed Forces, public servants, and participants in the defence industry in the examination and teaching

of the 1950s, the Korean War, the formation of NATO, and the deployment of forces overseas in peacetime. Claxton was unique in Canadian

determinant and is a senior defence analyst with the Conference of Defence Associations.

The Conference of Defence Associations (CDA) was engaged as a primary partner in this effort. Members of the Conference of Defence Associations Institute (CDAI) in particular were instrumental in assembling experienced people to undertake primary research and others, who contributed information, insights, opinion, and unique expertise to the project. Other members of both organizations read the manuscript, some several times, checking facts and offering advice to the researchers and the editor. Once the manuscript was completed, members of the CDA and CDAI assisted in the presentation of the work to the public and to members of parliament through the CDA's wide network of interested associates.

Too many people were involved in this project to mention them all, but some deserve special thanks for their contribution to the final product. Lieutenant General Richard Evraire (ret), President of the CDA, not only supported the project and the researchers, but he also turned his considerable skills as an editor to the manuscript, an effort that is reflected throughout the *Claxton Paper*. Colonel Alain Pellerin (ret) worked from the beginning of the process as project manager, assembling information and sources, contributing to workshop discussions, and reading and commenting on various research papers. He also brought the work to the attention of "the Ottawa men" in a successful effort to highlight the serious problems here addressed to individuals who might influence future defence policy.

Brigadier General Don McNamara, President of the CDAI, contributed notes and advice and read several of the individual research papers. He brought to the project and to the attention of the researchers and the editor his special insights into the realities of defence policy-making in Ottawa, the "system of systems" that is the Canadian Forces, and the particular situation facing Canada's air force. Dr. Richard Gimblett, "a former naval person," also read the project papers and added his deep understanding of naval strategy and the considerable problems that maritime commanders will encounter as they try to find ways with ever-decreasing resources to turn governments' policy declarations into realities.

Scores of officers and officials are employed in National Defence Headquarters doing essentially what a few researchers attempted to do in

this project. These dedicated people understand the seriousness of the

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# *A National Crisis for the Next Government*

... we must be prepared to defend our citizens, our economy, our infrastructure, our economic systems, and even our way of life.

*John McCallum  
Minister of National Defence  
October 2002*

## TWO FORCES, ONE PROBLEM

Informed Canadians are aware of the perilous state of the Canadian Armed Forces on active service today. Numerous studies, both public



The next government will be caught up in a cascading policy entanglement initiated by the rapid collapse of Canadian Forces core assets and core capabilities. This problem will inevitably disarm foreign policy as Canada repeatedly backs away from international commitments because it lacks adequate military forces. In these circumstances, new policy initiatives aimed at “being useful to the United States in our own interests” may well be derailed. When, however, the government moves to solve this capabilities problem, presumably by rebuilding military capabilities, the real crisis will be revealed. The government will find that it cannot achieve this aim before vital Canadian Forces capabilities fail.

Even if the government were to increase expenditure allocations to national defence immediately and substantially, that pending crisis could not be avoided. The time required to replace major equipments, develop coherent military capabilities, and rebuild the “trained effective strength” of the armed forces simply exceeds the mandate of the next government, even if it were to serve a full term. Thus, the true crisis that will be sitting on the doorstep as the next government moves into office will be to find ways to conduct a credible foreign policy and reconstruct relations between Canada and the United States, as the operational capabilities of the Canadian Forces continue to decline through the next five to ten years. At best, the next government might set the Canadian Forces on the road to recovery, but that intent still leaves unfilled the immediate, critical needs of foreign and national defence policies.

This monograph presents the major findings of a research project aimed at discovering the true nature of the crisis of the future force. The central question for the researchers was this: given past and present policies, what will be the state of core military capabilities in five, ten, and fifteen years? Researchers looked for answers in three main areas of concern: equipment profiles, the Canadian Forces population, and “enabling” or support elements of the armed forces. Studies reveal a *future force* undeserving of this title. Rather – rapidly and then inevitably in five or ten years – Canada’s major military equipment will succumb to the combined effects of overuse and technical obsolescence, making them operationally irrelevant. People, described in official Canadian defence literature

cases because spare parts and technicians are not available and will not be available in the years to come.

Canada is heading for a long period when governments will be without effective military resources, even for domestic defence and territorial surveillance. Even if the next government were to provide nearly unlimited funds in an attempt to overcome this deficit, little can be done before the apprehended crisis becomes fact. The downward slope of the capabilities curve is too steep, and the slide is too fast. Many core capabilities, or essential elements of them, will collapse before operationally effective units can replace them. Canada in a few years will be effectively disarmed.

### THE PARAMETERS OF THE RESEARCH PROJECT

Researchers were asked to work within a particular set of ideas and definitions and to concentrate their efforts on the primary subject: the future force. A brief explanation of these research parameters might help readers understand more fully the project and its insights.

*The Present Force and the Future Force.* Senior military officers and defence officials are routinely concerned with both the present force and its activities and the future force intended to replace it. A coherent de-

operational acceptance comes back to life. Researchers in this project clearly reveal the consequences for this national habit for the Canadian Forces of tomorrow.

The present force and the future force can compete with each other for attention and funding, sometime so intensely that one becomes the enemy of the other. This unfortunate dynamic is especially evident whenever the Canadian Forces is placed on a fixed budget, which is the usual situation. The present force consumes most of the budget simply to pay salaries and the housekeeping costs of military activities. The capital-investment account gets what might be left over after this overhead has been paid.

Real operations, such as those the Canadian Forces has been conducting since 1990, increase overhead costs, and the only source of funds to pay these bills for a defence policy on a fixed budget is the capital account. Such increases as the government has made to the defence budget in the last few years have been unavoidable contributions to the present force and ongoing operations. But even these additions are not enough to pay for complex operations, as in Afghanistan. Thus, officials are forced, as Defence Minister John McCallum complained, to finance current activities “by raiding the capital budget”.<sup>1</sup>

Over the last ten or twelve years, the present force has become the unwitting enemy of the future force, drawing money and attention from projects and programs meant to sustain Canada’s core military capabilities. The effect of this dynamic has been so severe and prolonged that the bill to recover the future force is far beyond the means available in existing and predicted defence budgets. The researchers paid very close attention to this dynamic relationship and drew from it a rather disheartening set of conclusions.

*A Focus on Capabilities.* Researchers were not much concerned with the effects of defence policy on the future of extant military organizations. The primary purposes of defence policy are, after all, to provide military capabilities and put them to proper use. Throughout this report, therefore, researchers avoided framing the data or their conclusions around the institutional interests of the navy, army, or air force. They looked instead at the state of core military capabilities, which are nearly always composed of elements from every branch of the Canadian Forces.

Core capabilities are, in fact, composed of several intertwined elements, mainly trained people, equipment, command and control systems,

training establishments, and logistical resources and units. These elements, however, provide little capability if they are simply piled on a jetty. Usable capabilities are created when experienced commanders and trainers meld the elements into operational units. If any one of the requisite elements is missing, or time is not provided for collective operational training, then

During the Cold War, the Canadian Forces developed an industrial model for managing people. Citizens were recruited, were assigned to functions, progressed (or not) for 30 years, and retired. Few operational surprises interfered with this pattern, which was established to suit the peculiar conditions of the Cold War – “a war without battles”. In the new era, described in Chapter One of this work, the situation is very different. People are being consumed in operations – much as in any past war – and the Cold War model for “human resources management” does not fit these circumstances. Thus, the comfortable profile of the military population is no longer a reliable guide for force planning. Indeed, the researchers found the profile to be seriously skewed, illustrating an im-

Nor would a responsible political leader want to leave this national priority in the hands of officers and officials – not that they are not competent and trustworthy. Canada’s national defence is the responsibility of every Canadian, and politicians through their decisions, actions, and the oversight of the machinery of government must provide direction to this fundamental national policy.

#### THE 2004 DEFENCE REVIEW

Canada’s defence policy will be “reviewed” sometime soon after Jean Chrétien leaves office. Past reviews, as in 1993 for example, have been comprehensive, mainly because of the long periods between them.

Defence reviews that begin with the assumption that all options are open invariably produce a set of very general recommendations that prove to be of little practical use to defence ministers or senior defence-planners. The next defence review must concentrate on the gathering crisis of the future force and its serious consequences for Canada-United States relations and foreign policy generally. The review, therefore, should have two immediate objectives.

First, the committee ought to provide advice to the government on how Canada is to manage domestic and foreign policy with ever-decreasing military capabilities. The committee might recommend ways in which present force capabilities might be stretched and preserved until replacements come on line.

Second, the committee must construct a future-force programme that would identify high-priority projects and their costs; suggest ways to reform, if necessary, acquisition methods to provide a speedy recovery of failing capabilities; initiate a subsequent full review of Canadian Forces personnel policies aimed at bringing them into line with current realities; and, finally, outline a parliamentary process for overseeing the recovery of armed forces capabilities over the long term.

This type of targeted defence review is without question of the utmost importance, and it is the only sure way to inform the government and the public about the seriousness of the defects in defence policy. The degree to which the prime minister personally directs this review and supervises the recovery of military capabilities will signal to Canadians, the federal bureaucracy, and Canada's allies the extent to which the country is back in the game. A widespread review identified by experts as merely a device for avoiding hard choices or evading the crisis at hand will provide a clear signal that Canada is withdrawing willy-nilly from its national and international responsibilities. If the future force is allowed to fall further into disrepair, then Canada cannot help but become the first modern and major power to disarm itself. The next government's defence policy ought to be directed towards saving Canada from this preventable outcome.

#### NOTE

<sup>1</sup>McCallum, John, Minister of National Defence, speaking to the Toronto Board of Trade, Toronto, Ontario, 25 October 2002.

## CHAPTER ONE

# *The Fundamentals of National Defence Policy Are Not Sound*

*Douglas L. Bland*

The key principles of the 1994 Defence White Paper continue to be relevant in today's uncertain international security environment ...

*Canadian Security and Military Preparedness  
The Government's Response to the Report of the Standing  
Senate Committee on National Security and Defence (2002)*

Ask any senior Canadian defence department official why no public review of defence policy has been attempted nor any new White Paper on national defence policy produced since 1994, and the official will invariably reply, "there is no need of either because the fundamentals set out in the 1994 defence policy paper remain sound." Yet in the summer of 2003, as Canadian Armed Forces units again deployed to Afghanistan on another round of combat duty, it was obvious that "the fundamentals" underpinning today's policy and decisions are not sound.

Almost every 1994 assumption, assessment, and conclusion about the world we live in, the breadth and demands of Canada's explicit and implicit commitments to the international community, the military capabilities Canada needs to meet them, and the funds required to sustain them are seriously weakened or compromised by the facts of international security and defence relations in the world of 2003. Ten-year-old estimates of "how much is enough" for national defence have been proven false. Indeed, the relevance and prudence of every important element of defence policy are open to challenge, if only because too much time has



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passed since they were last scrutinized critically and comprehensively. The only responsible conclusion one can draw from an assessment of the most critical fundamentals of current policy and the decisions built on them is that they are not sound and that Canada's defence policy as a whole is, therefore, suspect.

Military capability is the essential element among a host of funda-

entirely. As one element of a capability comes under stress, then invariably its other components do so as well, causing a deterioration of that capability system. The Canadian Forces medium-range air-transport capability built around the CC-130 Hercules aircraft provides an example of this relationship. Every deployment places greater stress on the aging fleet of Hercules aircraft, raising the demand for spare parts, which are in short supply. Then, for want of spare parts, mechanics cannot do their duty and they leave the service; for want of mechanics, aircraft cannot fly; for want of aircraft, pilots quit; for want of aircraft to fly vital missions, defence policy is endangered. This scenario is being played out across the most important deployable capabilities and military occupations.

Some will point out that the government has recently boosted defence spending, which is true. These new funds, however, are directed mainly at rescuing the present force and ongoing operations of the Canadian Forces: that is, at overhead and the maintenance of existing capabilities even as they, like old soldiers, fade away. The problems addressed in this research are those of the future force, the set of military capabilities that must be prepared today for tomorrow's duties.

Governments have a responsibility for both the present force and the future force. For too long, however, successive governments have made the present force the enemy of the future force by keeping the armed forces on unreasonably low, fixed budgets. Chiefs of the defence staff and officials have been compelled by falling budgets and increasing activity rates in all areas to take funds from the future force – from capital investment – to pay the overhead – the personnel and operations and maintenance bills of the present force. They are, in effect, dumping fuel from the aircraft to lighten its load to get a few more miles before it runs out of petrol and falls from the sky.

The hope, and it is no more than that, is for some event to intercede and save the falling aircraft, some dramatic change to provide a safe haven for the less demanding fundamentals of *1994 Defence White Paper*. But there is no safety in turning the aircraft around nor in circling in place. Canadians must begin quickly and dramatically to reconstitute and transform defence policy, the defence establishment, and the Canadian Forces if they are to confront successfully the evident, not the hoped for, fundamentals of present conditions and the immediate future.

## THE FUNDAMENTALLY CHANGED STRATEGIC LANDSCAPE

The ending of the Cold War brought into being “a new world order”, a new international relationship among states. But it is not a new order of peaceful international harmony, a situation in which laws, rules, and consensual authority prevail. Since 1989, leading nations have been engaged in political, diplomatic, economic, humanitarian, and military activities to bring such an order to specific regions of the world, as part of a collec-

disputes between states and to impose its will on lesser states. This assumption stood on the even less stable notion that the permanent members of the Security Council would be able to set aside to some extent their national interests in favour of global interests. The new world order depended on the willingness of the members of the Security Council, with or without the General Assembly's involvement, to use their military, economic, and diplomatic powers to discipline recalcitrant states. Success, however, also depended greatly on the credence that leaders and citizens in uncooperative states gave to pressures applied to them by the major powers.

As the 1990s unfolded, to the surprise and frustration of many poli-

the device for encouraging, imposing, and enforcing order anywhere, whether sponsored by the international community or by states in coalitions of the moment, people noticed. This fact is hardly surprising, even in relatively peaceful encounters, given the directness of military actions, the cost to all parties, and the difficulties experienced in moving from

## STABILITY CAMPAIGNS – THE NEW FUNDAMENTAL

Armies and navies and air forces learn on the job, and if defence policy is to be relevant and prudent, it must adjust to the reality of these lessons. Four fundamental differences between the Cold War era and immediate post-Cold War analysis on the one hand, and the new world-order era on the other, are now evident from ten years of campaigning to bring order to, or impose it on, lawless parts of the international system.

- Military capabilities must be radically transformed to meet very different structural, doctrinal, and operational demands created by these world order campaigns.
- Campaigns are now usually conducted in underdeveloped states and regions where conditions impose significant logistical loads of a scope and scale not anticipated in the early post-Cold War era.
- The legacy of Cold War “peacekeeping” and its so-called lessons is dead, and provides no credible guide to defence policy, force development, or military doctrine.
- Finally, the usual schematic for framing Canada’s defence missions – the defence of Canada, the defence of North America in cooperation with the United States, and international cooperation in security affairs, as essentially stand-alone missions – is no longer valid because all these activities are now embodied in one unified mission, even when components of that mission are conducted in disparate regions around the globe.

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bounded by Europe (broadly considered) and North America. The world-order era, on the other hand, is global in breadth, defined in NATO terms during the last ten years as “out of area”. Such regions, especially in Africa and the Far East, present significant complications for the usual contributing nations, including the United States. Stability campaigns have been conducted near the edge of most nations’ deployment capabilities. The transportation of forces, and their sustainment in Africa and some other regions, is a complicated matter of great expense, made more so by the fact that only the United States has adequate long-range military transportation systems. As a result, force options tend to be limited to small, “light” formations. Often such units are adequate for the task at hand, but this limitation does restrict missions and may impose on the deployed force a high degree of risk that might not be necessary if transportation systems were more capable and the operating environment less forbidding.

Distance is not the only or the most limiting factor in such campaigns. In many areas, even in the Balkans in some respects, the climate and the terrain pose significant operational problems for troops and commanders. Ironically, the environment can degrade the technical capabili-



circumstances operations will be conducted have a significant influence not only on current campaigns but also on fundamental national decisions about defence policy, strategy, doctrine, and force structure over the longer term.

It is in these areas that the experiences of the stability campaigns of the 1990s are most evident. Of all the underlying factors, few are as important as the assumption that the campaigns of the future will be fought in faraway places of which our leaders, commanders, and troops know very little and where technical advantages drawn from the Cold War may not provide the return hoped for in other, more familiar places.

France, for example, has a large, sophisticated, nuclear-capable armed force. But its 2003 deployment into the Democratic Republic of Congo to secure a small region in that state was deemed by French officers as “highly risky”, underscoring the asymmetry between military capabilities developed for the Cold War and those needed for the world-order era. France’s problems also highlight the great difficulty for modern states of bringing the full force of their military capabilities to bear even on weak states and violent organizations in these circumstances.

Nations are slowly – and in some case, reluctantly – adjusting their military force structures and range of capabilities as stability campaigns in distant underdeveloped lands become the operating norm for their armed forces. Defence-procurement programmes are shifting from heavy mechanized formations to lighter, more easily transportable formations. More money is being directed towards air- and sea-lift capabilities and to rapidly deployable logistical units. The ability to put firepower on targets remains a key criterion for weapons systems, but technology and the demands of experience gained on past stability campaigns are moving programs towards lighter, smaller, more accurate weapons that can be handled by fewer soldiers. Navies have adopted or are developing doctrines for “littoral warfare” in support of ground operations and other tactics, not only to project power from the sea but to maintain control of the seas. Only the United States has the means and the will to hold ready a full range of military might on the scale required for global warfare. Other states are making more limited choices, and those choices are conditioned by the assumption that their armed forces will most often be called to join stability campaigns in support of international order.

*The End of Peacekeeping.* Stability campaigns and operations are not peacekeeping as the term and concept were understood throughout the Cold War era. Although the ends of peacekeeping and stability operations may be similar – the establishment of a harmonious order leading to permanent peace – the operating principles of the two are significantly different. Stability campaigns are not policy-free; that is to say, forces are deployed in most instances to achieve goals openly related to the interests of the contributing nations, even though at times their policy motives may be shaded by egalitarian rhetoric.<sup>3</sup>

Neither the civil authority nor their force commanders assume that stability campaigns will be “impartial” affairs, as is the case in United

True believers, some scholars, and others bent on particular interests have tried to rescue traditional peacekeeping by attempting to modify its methods while holding to its ideological roots. They speak, for instance, of “muscular peacekeeping”<sup>4</sup> and use other terms intended to place

for defence policy. Today, there can be no difference or distinction in policy or force structure in these areas. The defence of Canada is inseparable from the defence of North America and from the imposition of order in other specific regions of the world. The destruction of terrorist bases in Afghanistan and naval interdiction in the Arabian Sea are examples of the extension of the campaign to defend Canada at home by acting abroad. This symmetry of missions and commitments is a cardinal characteristic of the new era and, if acknowledged, will have a profound effect on national defence planning.

Finally, and of great importance for those planning for Canada's future armed force, is the fundamental fact that continuous warfare – a conceptual innovation in itself – defines the strategic circumstances of the international system. Although wars and conflicts may be settled in one region and a sort of peace brought to another, the general and immediate causes of these types of disturbances will continue across the globe far beyond the foreseeable future. Continuous warfare may be defined as wars that endure in various degrees and intensity without end, simply because no belligerent has the power to overcome any other. Characteristically, these wars involve military and paramilitary forces, “low-tech” weapons and devices, intermingled military and political authorities, contrasting and contradictory aims, intense fighting interspersed with “cease fires”, and truces followed by the resumption of disorder. Often “total

These new fundamentals have greatly influenced the reality of Canadian Forces operations and Canadian foreign-policy decisions since 1989. They have also, willy-nilly, driven defence-policy decisions, large and small, and in the circumstances changed the direction of declared policy in fact. The attention of officers and officials in National Defence Headquarters has shifted from the administrative routine of the early 1990s and the habit of “lending troops”, to other more immediate concerns, not just for the deployment of forces but for their command and employment according to Canadian laws and standards.

However these outcomes may benefit today’s Canadian Forces and defence policy generally, they consume the precious time senior officers have for thinking about future national defence to the detriment of critical force-development issues. Many officers and officials do spend their days looking forwards, but they are handicapped into impotence by the lack of money to develop the forces they see as necessary to Canada’s national defence in the future.

The most basic new fundamental is completely opposite to that presented in 1994. Rather than a world of falling commitments allowing for fewer, less costly capabilities, the Canadian Forces today faces a world only faintly perceived in 1994. Canada lives in a world of more commitments conducted in circumstances that are enormously costly in people, equipment, and political attention. Some political leaders might have supposed in 1994 that their post-Cold War vision would allow the Canadian Forces to gradually drift into irrelevance. Unfortunately, for them and many others, that vision is now but a dream departed. Nevertheless, the consequences of holding onto that dream – so evident in the government’s reluctance to change its fundamental policy assumptions – may be seriously disrupting the future possibilities for Canadian foreign policy and national defence.

## THE NEW FUNDAMENTALS OF CANADA-UNITED STATES DEFENCE RELATIONS

Some Canadian officials might not think that the fundamentals of Canada-United States defence relations have changed since 1994, but Americans (insofar as they pay attention to the issue) certainly do. The changes are evident, for instance, in America’s dramatically altered national-

defence strategy, in its defence and security organization and international commitments, and in the administration's attitudes towards "old Europe", and they break the easy rhetoric and assumptions that underpin Canada's defence policy today. The most significant change, however, is the change in American citizens' perception of their security at home and their growing alienation from so-called traditional allies. It is a state of mind reflected vigorously in the policies and actions of President George W. Bush.

The unremarkable sentences in *1994 Defence White Paper* outlining Canada-United States defence relations simply repeat the unreflective wisdom of the Cold War relationship. The relationship, we are told, is "close, complex, and extensive." No matter what Canada might do to

North American interpretation of Canada-United States defence relations. But, of course, that was never the aim for this section of *Defence 1994*, which obviously described but one element of a wider, indeed, global, allied defence relationship. But that global relationship, too, has been altered beyond recognition, especially so after the government's pointed refusal to consider supporting President Bush's strategy to deal with the tyrannical regime in Iraq.

Nice arguments could be made about the precise timing of the failure of easy assumptions of Canada's defence policy towards the United States. There have been stark moments, none more so than the attacks of 11 September 2001. But even without this horrid day, American defence

## THE NEW FUNDAMENTALS OF DEFENCE MANAGEMENT

The radical change in international security and defence affairs, when combined with niggardly defence spending from 1989 to the present, inevitably affected the management of defence policy throughout the period. Not only are the strategic fundamentals of policy no longer sound, but the fundamentals of defence administration in Canada have been shattered as well.

While combat capabilities were being dismantled at the end of the Cold War, bureaus for managing the surviving force grew. National Defence Headquarters (NDHQ), designed in 1972 to meet Cold War commitments and the demands of the Ottawa officialdom, remained essentially unchanged in structure throughout the 1990s. Concepts for managing most parts of the defence program also stayed static, largely unresponsive to the actual needs and circumstances of the new reality.

Cold War-era defence management in Canada was built on the assumption that each year would follow the next in a never-ending stable pattern. Management systems for personnel, procurement and acquisition, supply, and budgeting were, by and large, fashioned around this steady state and the assumption that war was highly unlikely. The argument could be made, especially after 1970, that the management of defence trumped the operations of defence. Moreover, the priorities of defence planners for decades lay in the future force, often at the expense of the present force.

In the post-Cold War era, the main aims were to hold to proven policies, husband scarce resources, and restrict the effect of operations on the day-to-day business of national defence. Gradually, however, the costs and circumstances of the world-order era wore into the system, creating serious contradictions between operational realities and bureaucratic preferences. Nevertheless, the tail tried hard to keep its control over the dog. The concepts underlying three central managerial functions no longer seem adequate to the situation and circumstances of national defence in 2003. The fundamentals of defence management are not sound.



followed as a fundamental of 1994 defence policy that this highly trained, long-service force would be unchanged and available to effect defence policy. Personnel policies, therefore, continued under the Cold War, industrial, “cradle to grave” career model suitable for an armed force where people were expected to serve the colours from recruit to sergeant-major, from officer cadet to chief of the defence staff. Operational duties were, of course, included within the model, but mostly only as a routine part of “career development.”

War and operations in the 1990s interfered with but did not change this scheme. People were killed and wounded in the field, many suffered mental injuries, and young members of the Canadian Forces began to leave the armed forces worn out from constant assignments overseas. Indeed, every fundamental notion about recruitment, training, service, benefits, and post-service care developed for the Cold War era failed to fit the realities facing the Canadian Forces in the 1990s and afterwards. People serving in the core land, sea, and air combat and support trades – the people most needed to fulfil the actual wartime policies of the government – soon began to leave the Canadian Forces early, and they continue to do so. As experienced leaders depart, few are left to train replacements and thus both quantity and quality are eroding together. By 2003, continued deployments and operational stress had changed the composition of the Canadian Forces and the assumptions of post-Cold War policy. Clearly, the fundamentals of personnel policy are not sound.

*Logistics, Equipment Acquisition, and Life-Cycle Management.* During the Cold War, Canadian defence planners depended on a well-developed national and allied scheme to provide logistical support to deployed forces. Among other things, agreements and “host nation support” relieved somewhat the burden of national logistics planning, and NATO “interoperability” allowed national forces to share supplies, such as ammunitions and fuels, with each other. The theatres of operation were mostly determined, and to some degree stockpiles were established to meet at least initial operational requirements. Furthermore, the Canadian Forces planned to conduct operations in highly developed societies possessing sophisticated infrastructures.

These agreements and civilian establishments, moreover, set the requirements for Canadian and allied military transportation capabilities, which were created to operate over short to middle distances and from

modern facilities. Even peacekeeping missions were rather easily managed because they were small and logistical demands were routine. Logistical plans and requirements were, therefore, relatively uncomplicated and reasonably assured. But no matter the wartime plan, the dominant fundamental of the Cold War and post-Cold War logistical system was the assumption that there would be no war, but if war came, then there would be plenty of time to move from the extant peacetime system to the planned (but rarely tested and unreliable) wartime system.

After 1991 and the first deployments into the former Yugoslavia,

of the nature of their employment and the regions in which they are em-

the Canadian Forces into Somalia in 1992 allegedly followed this formula, shaping the force to fit budgetary requirements but not operational requirements. A fundamental assumption emphasized during the crafting of *Defence 1994* was that customary ways of managing defence spending would suffice in the 1990s and beyond; in fact, the government demanded nothing less.

The customary way hangs on a certain inevitable dynamic. The defence budget is most easily understood when it is seen as three baskets of goods or costs: people; O&M, or services and housekeeping; and capital expenditures. The defence minister, the chief of the defence staff (CDS),

was in the capital account, and it was raided, year after year. Raiding the capital account may be a useful short-term expedient from time to time, so long as the loss in one period can be recouped in another. Throughout the past ten years, however, the fall in the capital portion of the budget has been relentless, and the damage is cumulative.

Planners of experience assume today, as they did in 1994, that about 23 percent of the annual defence budget must be allocated to the capital account to maintain essential capabilities. The account has never reached

and politicians everywhere in the West leapt at the idea because it seemed to offer security without cost. The fault in Canada lies in not responding to the changes in the fundamentals of national defence once the need was evident, which arguably occurred in about 1995. The greater fault, and it rests in the hands of a few political leaders, lies in continuing blindly onwards without pause while driving the Canadian Forces more deeply into harm's way and using people and resources with reckless disregard for future needs.

If the fundamentals had been dispassionately reassessed in 1995-96, then Canada might have begun to reconstitute its defence capabilities sooner, probably as soon as the federal fiscal deficit had been mastered. Had this course been followed, then the present and gathering crisis in defence and foreign policy might have been avoided. Leaders cannot plead that they were unaware of the need to change the fundamentals of defence policy in the face of the barrage of information, public and private, that was put before them, especially after 11<sup>th</sup> September. Yet they let the matter slide.

Now, in 2003, the crisis caused by willful disarmament is upon the nation and threatens the country's hard-won and honourable place in the international community of like-minded nations. Canada's sovereignty, seemingly placed absentmindedly in the hands of others through neglect of the instruments of national security, is increasingly unsure. The fidelity of Canada's political community to the nation's traditional liberal-democratic allies and to the interests and values Canadians have defended with them in peace and war is an open question in capitals worldwide.

Yet, as these pages will attest, there is not much Canadians can do to save this situation, at least not in the term of the next government or even the next government after that, perhaps. The descending slope is too steep and it will take too long to turn it upwards for tomorrow's government to benefit from altered policies. Managing this dangerous period between falling and recovering military capabilities is the essence of the gathering crisis. Nevertheless, leaders today can begin the process of reconstituting Canada's armed forces and, by doing so, lead Canada back to its rightful and responsible place among the free, liberal democracies of the world.

NOTES

<sup>1</sup>Canada, “PCO Meeting – Peacekeeping Operations.” Memorandum from ADM Policy Kenneth Calder to Deputy Minister Robert Fowler and CDS General John De Chastelain (Ottawa: Department of National Defence, 30 March 1993).

<sup>2</sup>For evidence, see the award-winning documentary, *A Question of Honour*, Volume 2 (Toronto: Stornaway Productions, 2002).

<sup>3</sup>Critics might declare that “traditional peacekeeping” was always concerned with national or allied interests, and that is certainly fair comment. True-believers and most of the United Nations bureaucracy over time would dispute this argument, saying that peacekeeping operations and negotiations associated with them were primarily aimed at non-state purposes. Critics of the United Nations might respond that, insofar as this was the case, it explains only why, in their view, the United Nations and its deployed forces can and have often become “part of the problem.”

<sup>4</sup>See Alex Morrison *et al.*, *Peacekeeping with Muscle: The Use of Force in International Conflict Resolution* (Cornwallis Park: The Lester B. Pearson International Peacekeeping Centre, 1997).

<sup>5</sup>*A Question of Honour*, Volume 1.

<sup>6</sup>United States, *The National Security of the United States of America* (Washington, DC: The White House, September 2002).





The two Gulf Wars demonstrated the importance of technological modernization. The side with the technological advantage gained an important combat advantage on the battlefield. For example, a key element in the “Revolution in Military Affairs” is the parallel “Revolution in Target Acquisition”. First Target Acquisition (FTA) provides a significant advantage in determining who survives in one-on-one combat between armoured vehicles, in combat aircraft, or in artillery/target engagements. The criticality of FTA is driven, in turn, by the “Revolution in Weapons Accuracy and Lethality,” which guarantees a 95 percent probability of a first-round hit if the target has been accurately located. Moreover, contemporary weapons effectiveness now virtually guarantees a kill when the target is hit. Put another way, the single-shot-kill probability of leading-edge weapons is now approaching 1, as the US M1A1 Abrams main battle tanks so clearly demonstrated in the Second Gulf War.

Since advances in military technology are now so driven by developments in civilian Information and Communications Technology (ICT),

The “strategic capital gap” (the gap between capital needs and capital funds) is today an even more significant problem than it was when the late Professor Rod Byers, first Director of the York University Research Programme in International and Strategic Studies, coined the famous “Commitment/Capability Gap” phrase at the end of the decade of the 1970s – a period that former Conservative Party Defence Minister Perrin Beatty later so aptly termed “The Rustout Decade” of the Canadian Forces.

A critical task for Canadian defence planners and analysts, then, is the identification of:

- the critical physical and technological life-end points of major capability platform fleets;
- an estimate of the costs of their replacement and of the capital funds available for their replacement; and
- an estimate of the future capital-investment needs for “transformation”.

This chapter addresses these issues.

## THE EFFECTS OF PHYSICAL AND TECHNOLOGICAL AGING ON PLATFORM LIFE-CYCLE PLANNING

### **The Effects of Aging on O&M Costs**

Increased age brings with it the requirement for steadily increasing repair and maintenance costs, which themselves may limit the amount of money available for platform renewal.

The Congressional Budget Office (CBO) of the United State Congress, in a report to the Senate Budget Committee, noted that “O&M dollars that are spent directly on operating and maintaining military equipment – to pay for fuel, purchase or repair parts, and overhaul weapon systems at depots – account for a relatively modest share (about 20 percent) of total O&M expenditures today.”<sup>1</sup>

Nearly half of that 20 percent, approximately 9 percent, is devoted to the “purchase of repair parts”, defined as “actual expenditures on consumables, such as washers, filters, and gaskets”, and “depot-level repairables” (DLRs), such as spare parts, avionics, and engine components. Those costs, combined with fuel costs, are what are often referred to as “steaming-hour”, “flying-hour”, or “tank-mile” costs. Fuel accounts

for 4 percent of O&M costs, and the remaining 7 percent is spent on “Major Overhaul at Depots”, which “includes spending on the inspection, maintenance, and repair of military equipment, excluding DLRs, at large public (Department of Defence) and private (contractor) depots.”

While the Report acknowledges data problems in the various studies it reviewed, it concluded that “CBO’s analysis of the relationship between equipment costs and age, which focused on Air Force and Navy aircraft ... indicates that aircraft do become more costly to maintain as they age. CBO estimates that spending on O&M for aircraft increases by 1 percent to 3 percent for every additional year of age, after adjusting for inflation.”

Dr. Raymond Pyles of the RAND Corporation, in testimony before the United States House Committee on Armed Services, provided a similar analysis, noting that as aging aircraft went through periodic heavy-maintenance sessions, the cost of each session rose sharply.<sup>2</sup> He pointed out that the cost, in constant dollars, of the seventh heavy-maintenance session (called for in the case of a 40-year-old aircraft) would be between five and nine times more expensive than the cost of its first heavy-maintenance session, normally carried out some five years after delivery. He noted that a similar pattern would be expected for commercial aircraft.

The CBO Report also addressed the question of “downtime”, reporting that its review of prior studies revealed that “Equipment’s age can affect readiness as well as maintenance costs.... Analyses of the time between breakdowns and the time spent fixing equipment also indicate that age has an effect. According to those studies, an additional year of age may decrease the time between breakdowns from 1 percent to 7 percent and increase downtime from 1 percent to 9 percent.”

One particularly telling case study cited by the CBO Report pertained to the KC-135 Tanker aircraft, a variant based on the now elderly Boeing 707.

The KC-135 Stratotankers, many of which are 40 years old, are some of the oldest aircraft the services operate. And they are becoming more expensive to operate; the cost per flying hour increased from \$8,539 in 1996 to \$11,128 in 2000 (after adjustments for inflation).<sup>3</sup> The military has little or no experience operating and maintaining aircraft of that age, and no commercial airline fleets of a comparable age exist. Consequently, the [U.S.]

As the KC-135 tankers age, they require more maintenance, reducing the number of aircraft available for operations. For example, between fiscal years 1991 and 1995, the labor hours planned to complete depot overhauls of the KC-135s increased by about 36 percent, and the average time aircraft spent in the depot increased from 158 days to 245 days. According to Air Force officials, the growth in planned work included time to apply compounds that prevent corrosion and to rewire significant portions of each aircraft. In addition, according to a report by the General Accounting Office, "Shortages of spare parts, that were no longer in production or stocked,

after a recruiting moratorium of almost 10 years, imposed during the mid-1990s by federal budget cuts. According to Wattie, the document reports, “The combination of an ageing aircraft fleet, parts shortages, declining technician qualification and experience levels is resulting in increased inspection times and declining aircraft serviceability.”

His story was followed by a Canadian Forces Press Release,<sup>5</sup> dated 24 July 2003, which reported that the Air Force is being forced to reduce by 30 percent the planned flying hours of the Hercules fleet in 2003/4. 1 Canadian Air Division Commander, Major-General Marc Dumais, himself a former Hercules pilot, was quoted as saying: “A high operational tempo and an aging fleet have combined to reduce the number of available aircraft to the point where it became obvious that 16,200 hours was the most appropriate YFR [yearly flying rate]. We are projecting a slight increase to 17,100 hours next year.”

The Press Release went on to report:

The 19 older E-model Hercules in use by the Canadian Air Force are the highest-time military Hercules in the world, with most having accumulated between 40,000 and 44,000 flying hours. As the aircraft age, the time required to complete periodic inspections, which are conducted every 900 flying hours, has increased. As well, the Progressive Structural Inspections, conducted by a contracted maintenance facility every 3,600 flying hours in concert with a periodic inspection, also consume more time.

The troubling thing about this issue is that the fundamental problems of the Hercules fleet have been known for some time and are, in fact, worse than this overview indicates. In 2001, the Auditor-General of Canada noted that in 1990/91 the CC-130 fleet was flying about 35,000 hours per year, but that rate had declined by about 37 percent by 1999-2000.<sup>6</sup> The further reductions announced in 2003 will represent a decline of 54 percent from the 1990/91 levels, bringing the annual flying hours down to only 46 percent of the 1990/91 total, for a fleet that is absolutely critical to our ability to mount or support international operations or to provide assistance to the civil authority at home.

The Auditor-General also found “significant increases in the ratio of total maintenance hours to flying hours from 1990-91 to 1999-2000, namely, 62 percent for the Hercules. In the Hercules fleet, corrective maintenance accounted for most of the increase. Even though the Hercules flew about

37 percent less in 1999-2000 than in 1990-91, total hours of corrective maintenance increased about 26 percent; the ratio of corrective maintenance hours to flying hours doubled.”

### **The Sea King Case Study**

Then there is the perpetual saga of the Sea King helicopters.

The Chief of the Defence Staff, General Ray Henault, noted in a June 2003 Round-Table with media<sup>7</sup> that “... as we know the equipment, the mission equipment, in ... [the Sea King] is now obsolete ...” The CDS further noted that “maintenance of an aircraft of that nature, like the Sea King, starts to demand more time and obviously more energy and more money to maintain”.

Brigadier-General Colin Curleigh, former Commander of Maritime Air Group, referring to *the Sea King* Weapon System Support Plan (WSSP) 1998-2003, dated 4 September 1997, provides an insight into the technological depreciation problems of old airframes:<sup>8</sup>

The first objective is the vital one which deals with effective management to ensure the *Sea Kings*’ “airworthiness is preserved for the duration of the current ELE [Estimated Life Expectancy – which is now to the end of the year 2000] and in anticipation of an ELE extension to 2005 or even 2010.” Its main provisions include the major structural repair of the centre section, re-routing and clamping of fuel lines, strengthening the tail wheel support assembly, and adjusting the centre-of-gravity by moving mission equipment.

The second objective, supportability, deals with matters that could improve the cost-effectiveness of maintenance and repair and includes such items as major modifications to the engines and main gearboxes of the whole *Sea King* fleet. These modifications were driven by the fact that our *Sea Kings* are the last users of these critical drive-train components, and spare parts are becoming costly and difficult to obtain. Additionally, the transmissions are starting to produce problems leading to increasingly expensive inspection and repair at the contractor.

The third objective is Improved Capability, and as expected, is approached with extreme reluctance for the old *Sea Kings*. It includes replacing the ancient mechanical navigation system (a reminder of the old WWII ARL

tables) with used hand-me-down systems from the USN. With the success of the prototype of the Forward Looking Infrared (FLIR) detector in recent Peacekeeping and SAR Ops, it has been decided to install FLIR mounts and wiring in all *Sea Kings*, and play musical chairs with the 10-12 FLIR sets in the DND inventory. Some components of the unreliable and overloaded electrical power supply system will be improved. Trials are continuing on a Self Defence System that can be quickly installed if the need arises, such as during the Gulf War. The system will include such components as a Radar Warning Receiver, Missile Approach Warning, and Counter Measure Dispensing equipment.

The Auditor-General commented in 2001 that “the Sea King fleet’s availability declined from about 42 percent to 29 percent; departmental officials estimated that about half of that decrease was due to downtime for several aircraft modifications and other avionics upgrades, and the rest was for repairs to keep the fleet airworthy.” Then there is the “Abort Rate Problem”, which represents “the total number of suspected failures per 1,000 flying hours that result in cancellation of a mission.” The figures provided by the Auditor-General indicated that the “Abort Rate” for the Sea Kings rose between 1990/91 to 1999/00 by about 50 percent, from approximately 42 per 1,000 flying hours to about 61 per 1,000 flying hours.<sup>9</sup>

The current extent of the cost to maintain an aircraft already 40 years old, with “obsolete” mission equipment, was revealed by a May 2003 Sun Media article, later amplified in *Defence Policy Review*.<sup>10</sup>

We reviewed 61 post-deployment reports on the use of the Sea King aboard ships from 1 April 1995 to 31 March 2000. We found that 54 of the reports mention at least one of the following problems: scheduled



## THE RUSTOUT CRISIS OF MAJOR CF PLATFORM LIFE-EXPECTANCIES

Tables 2.1–2.3 provide a quick means of understanding the rustout dilemma of the Canadian Forces. They include the numbers in each major platform fleet, the year of the initial delivery of the fleet, and estimates of the expected service life of each fleet. Except where otherwise noted in the tables, they are based on figures provided by the Congressional Budget Office of the United States Congress to members of the Senate and House of Representatives.<sup>12</sup>

The shaded portions of the tables provide a quick visual indication of the age of the platform in comparison to its expected service life. Light grey cells indicate ages of less than 50 percent of the expected service life; dark grey indicates an age between 50 and 100 percent of the expected service life; black indicates age in excess of 100 percent of the expected service life.

These tables do not, however, show the age of the platform in relationship to its technological service life. This is now a more critical issue than physical service life, since the technological life-cycle is so much shorter than the physical life-cycle of military platforms. In earlier times, mid-life refits took place at the half-life point of platform life-expectancy, at about 10 years. Nowadays, technology mid-life refits should probably be done at shorter intervals, particularly as platforms are increasingly being given physical life-extensions well beyond their original expected service lives, as cost-reduction expediencies.

H. Lee Buchanan, U.S. Assistant Secretary of The Navy, Research, Development and Acquisition, commenting on service-life-extension programmes (SLEPs) for US aircraft carriers, states that “the life extension program will often cost as much as half the initial purchase price of the carrier. What you get back is another 50 percent extension on its life.”<sup>13</sup>

However, life extensions beyond original expected physical service lives are becoming increasingly controversial because there is a clear pattern of rising annual maintenance costs for each additional year of service life, and there may be increases in the operational unavailability of these life-extended platforms, as well.

From these tables, it can be seen that in the five-year short-run period (from 2003-2008), an immediate crisis appears in five critical areas: maritime (medium-transport and ASW) helicopters, the two Auxiliary

**Table 2.1**  
**Canadian Navy Major Platform Life-Expectancies**

<i>Platform</i>	<i>Number</i>	<i>Date of Origin</i>	<i>Service Life (CBO)</i>	<i>Age 2003</i>	<i>Age 2008</i>	<i>Age 2013</i>	<i>Age 2018</i>	<i>Age 2023</i>
AOR/ALSC	2	1969	35	34	39	44	49	54
CADRE	4	1972	35	31	36	41	46	51
Submarines	4	1989/3	33	14	19	24	29	34
Frigates	12	1992	35	11	16	21	26	31
MCDVs	12	1995	30	8	13	18	23	28

**Table 2.2**  
**Canadian Army Major Platform Life-Expectancies**

<i>Platform</i>	<i>Number</i>	<i>Date of Origin</i>	<i>Service Life (CBO)</i>	<i>Age 2003</i>	<i>Age 2008</i>	<i>Age 2013</i>	<i>Age 2018</i>	<i>Age 2023</i>
M-109s	76	1971	20-30	32	37	42	47	52

**Table 2.3**  
**Canadian Air Force Major Platform Life-Expectancies**

<i>Platform</i>	<i>Number</i>	<i>Date of Origin</i>	<i>Service Life (CBO)</i>	<i>Age 2003</i>	<i>Age 2008</i>	<i>Age 2013</i>	<i>Age 2018</i>	<i>Age 2023</i>
Mar Hel	29	1963	30-35 <sup>17</sup>	40	45	50	55	60
CC-130E	19	1963	30-40	40	45	50	55	60
CC-130H	13	1975	30-40	28	33	38	43	48
CF-18	80	1982	20-30	21	26	31	36	41
LRPA	16	1980	30-40	23	28	33	38	43
Tac Hells	78	1994	20-35	9	14	19	24	29
A310	5	1987	40?	16	21	26	31	36

Oiler Replenishment Vessels (AORs), the Medium Logistics truck fleet, the earlier set of 19 CC-130 medium airlifters, and the Army's M-109 Self-Propelled medium howitzers.

The Canadian Forces are already at the edge of the extinction of their sea, land, and air operational-transport capabilities.

### **Estimating the Cost of Replacing New Platforms/Capabilities**

In attempting to estimate the costs of replacing platforms (recapitalizing capabilities), an undertaking that the previous tables suggest could be carried out in a series of five-year periods, this analysis will make the simplifying assumption that the delays inherent in the Canadian procurement process can be removed as a limiting factor.

It might be useful to point out also that considerable difficulty exists in estimating total programme costs for purchases of major equipment, given that total cost typically includes such additional items as an initial set of spare parts, simulators and other training devices, initial training of maintenance personnel, and the costs associated with regional-benefit

considerations in letting government contracts (a practice found in most industrialized nations).

The DND Director General of Public Affairs (DGPA) recently hosted a Round Table<sup>18</sup> for defence analysts, concerning the Maritime Helicopter Replacement Project. In the discussion, DND officials revealed that the total current planned cost for the programme was \$3.1 billion for 28 helicopters: \$1.9 billion for the flyaway costs of the helicopters, plus \$1.2 billion for the non-aircraft portion, which would cover such items as those mentioned above (figures expressed in Canadian dollars throughout, unless otherwise specified). In other words, the non-aircraft cost increment was planned to be about an additional 63 percent on top of the initial flyaway cost.

As well, for offshore purchases, figures must be adjusted for differences in exchange rates. When the \$US exchange rates rise and fall against the Canadian dollar, the cost of imported American equipment rises and falls accordingly. These changes can be – and usually are – very costly. Table 2.4 provides some indication of the possible programme costs of purchasing certain American platforms to replace aging Canadian ones that have hit, or are about to hit, the end of their life cycles.

**Table 2.4**  
**Possible Programme Costs of US Platforms if Selected for Canadian Use**

<i>Replacement Platform</i>	<i>Number to Replace</i>	<i>Country of Origin Cost (US\$ millions)</i>	<i>Exchange Rate 5 July 2003</i>	<i>Programme Cost (63%) Increment</i>	<i>Final Cost per Platform (C\$ millions)</i>	<i>Programme Total Cost Estimate (C\$ billions)</i>
CC-130J	19	\$87 <sup>19</sup>	1.3368	1.63	\$189	\$3.6
FMTV <sup>20</sup>	2769	200 <sup>21</sup>	1.3368	1.63	438	1.2
Joint Strike Fighter	80	54 <sup>22</sup>	1.3368	1.63	117.7	9.4
F/A-18E/F	80	71.5 <sup>23</sup>	1.3368	1.63	155.8	12.5

Canadian cost figures cited in Table 2.5 were obtained from a variety of sources: existing DND estimates published in various *Long Term Capital Expectations Plans (Equipment)* or *Strategic Capabilities Investment Plans* documents; Industry Canada documents on Shipbuilding, and Industrial Marine figures on possible federal procurement of Shipbuilding and Ship Repair services; and finally, current figures on items listed in the Department of National Defence Reports on Plans and Priorities Status of Major Capital Equipment Projects.

**Table 2.5**  
**Canadian Estimates of Replacement Platform Programme Costs**

<i>Platform to Be Replaced</i>	<i>Number to Be Replaced</i>	<i>LTCP (E) 2002 Total Cost Estimate (\$ billions)</i>
Maritime Helicopters	28	3.1(2003 update)
CADRE	4	5.3
MLVW	2,769	0.838
Strategic Lift Air/Sea <sup>24</sup>		3.5
ALSC		2.3
AVRP <sup>25</sup>		0.2
<b>New Capabilities</b>		
Land Forces ISTAR <sup>26</sup>		0.63
Joint: CFISR		0.975
Joint: Polar Star		0.685
Joint: Nat Mil Sp Capability		0.270
<b>Life Extension/Modernization</b>		
Frigate LIFEX <sup>27</sup>		2.0
Aurora LIFEX		0.72
SELEX <sup>28</sup>		0.4



In the Rustout Decade of the 1970s, the decision to retain a personnel establishment too large for the available budget led to massive erosion in equipment procurement. In the current rustout decade, the infrastructure and operations and maintenance budget lines are crowding out both the personnel and equipment shares of the defence budget.

However, these figures must be divided between, on the one hand, those sums spent on construction, equipment for permanent infrastructure (such as the increasing numbers of “Simulators” used for training, and various other equipment items attached permanently to buildings rather than to operational platforms in the field environments), and major-equipment mid-life refit and life-extension projects, and, on the other

**Table 2.7**  
**Current Sub-Divisions of the Canadian Defence Capital Budget**  
**2003/04**

<i>Category</i>	<i>% of Capital Budget</i>	<i>% of Defence Budget</i>
New Platforms/Capabilities	44.4	7.0
Refits/Life Extensions	27.9	4.4
<b><i>Total Equipment</i></b>	<b>72.3</b>	<b>11.4</b>



The *total* capital component of the defence budget is now in the 15–16 percent range. The equipment portion, however, based on the NATO figures, has fallen to about 11.5 percent: a 50 percent shortfall from the oft-announced, but never achieved, policy objective of spending 23 percent of the defence budget on capital procurement.

### MODELLING CF MAJOR PLATFORM RECAPITALIZATION

For modelling purposes, then, it is useful to begin with two simplifying assumptions: first, that the overall defence budget will remain flat in 2003/04 constant-dollar terms, and second, that the available proportions of the defence budget devoted to the four categories cited will also remain constant at 2003/04 levels. These assumptions provide one-year and five-year total capital-expenditure figures as follows:

**Table 2.9**  
**Modelling the Canadian Defence Capital Budget Forecast**  
**(\$ billions)**

<i>Period</i>	<i>New Platforms</i>	<i>Re-fits/Life Extensions</i>	<i>Infrastructure Capital</i>	<i>Construction Capital</i>	<i>Total</i>
1 year	0.92	0.583	0.347	0.232	2.09
5 years	4.6	2.92	1.74	1.16	10.45
To 2020 (18 yrs)	16.7	10.5	6.25	4.18	37.6

The next step is to perform a sequential analysis of defence budget capital demand, availability, and shortfall by five-year periods. This can be done by identifying those platforms that will reach the end of their expected service lives during each period, those requiring mid-life refits or life extensions, and required new capabilities. An estimate of the costs in 2003/04 dollars of replacing them can be developed, as well as an estimate of the total capital available. The shortfall is then easily calculated.

For simplicity's sake, the infrastructure capital and construction capital can be treated as constants during the periods, except for the first period, for which the infrastructure equipment bill is known from the *Report on Plans and Priorities*.

**The Immediate Five-Year Plan: 2003-2008**

Table 2.10a shows the projected costs of new capabilities, old platforms expiring within this five-year period and their estimated replacement costs (cited in the *2002 Long Term Capital Expectations Plan (Equipment)*, except where noted), and aging platforms requiring life-extension refits.

**Table 2.10a**  
**Projected Costs for New Capabilities, Major Platform Replacement, and Refit/Life Extensions 2003-08**

<i>New Capabilities</i>		<i>Total Cost</i> <i>(\$ billions)</i>	
Joint: CFISR			1.0
Joint: Polar Star			0.7
Joint: Nat Mil Sp Capability			0.3
Land Forces: ISTAR			0.6 <sup>31</sup>
		<b><i>Sub-Total</i></b>	<b>2.6</b>
<i>Replace Platform</i>	<i>Number</i>	<i>Replacement Cost Per Unit</i> <i>(\$ millions)</i>	<i>Total Cost</i>

Table 2.10b shows the available capital funds and shortfall, using the FY2003/04 model forecast.

**Table 2.10b**  
**The Bottom Line 2003-08 (\$ billions)**

<i>Category</i>	<i>Funding Available</i>	<i>Cumulative Prior Years<sup>136</sup> Commitments</i>	<i>Real Availability</i>	<i>Demand</i>	<i>Shortfall/Overage</i>
New and Platform Replacement	4.6	-0.5	4.1	-18.725	-14.625
Modernization/ Life Extension	2.92	-0.9	2.02	-1.9	0.12
Infrastructure Equipment	1.74	-0.2	1.54	-2.0	-0.46
Infrastructure Construction	1.16	?	1.16	1.16 ?	\$?
<b>Total</b>	<b>10.42</b>	<b>1.6</b>	<b>8.82</b>	<b>23.785</b>	<b>-14.965</b>

With a total capital demand of \$23.8 billion, a real capital-funding availability of \$8.0 billion, and a recapitalization shortfall of \$15 billion, it is clear that the capital-equipment crisis will arrive in the 2003-2008 time-frame. The shortfall in the capital account is \$3 billion per year over the next five years.

The effect on CF operational capabilities will be the complete loss of logistics sea-lift, air-lift, and land-lift capabilities. With only 13 of the newer CC-130s (vintage 1970s) and five Airbuses surviving, the task of undertaking and supporting any but small, uncomplicated international or domestic operations, even within Canada, will be problematic. The loss of the AORs and destroyers makes any deployment of a Canadian naval task group outside Canadian waters nearly impossible without major assistance from allies or contractors, which has obvious implications for independent foreign or defence policies.

Thus, the ability to meet the commitments made in *1994 Defence White Paper* – to be able to deploy army and naval forces to “participate

in the defence of a NATO member state<sup>37</sup> – will disappear within the immediate (2003-2008) time-frame. It may be possible to avoid the destroyer problem by means of a second refit/life-extension, but the ex-

Using the forecast based on the FY2003/04 model, the available five-year capital is shown in Table 2.11b.

**Table 2.11b**  
**The Bottom Line 2008-13 (\$ billions)**

<i>Category</i>	<i>Funding Available</i>	<i>Cumulative Prior Years' Commitments*</i>	<i>Real Availability</i>	<i>Demand</i>	<i>Shortfall/Overage</i>
New and Platform					





## SOME VERY UNPALATABLE CONCLUSIONS

The cynical conclusion is that



Moreover, operational readiness would fall because of the increasing downtime for refits and maintenance, which would gut the real operational capabilities of the Canadian Forces. The Sea King saga is a classic example of the long-term costs of the SLEP strategy, as was the DELEX programme in a previous period.

There is some evidence that this process has already started. A comparison of the Long Term Capital Expectations Plan (Equipment) in *Defence Plan On-Line 2002/03* (extensively referenced in this document) with its successor in *Defence Plan On-Line 2003/04*<sup>51</sup> shows that the CADRE project in the 2002/03 Plan for the replacement of the four Tribal Class Destroyers, which contain the Area Air Defence and Command and Control capabilities for a Canadian Naval Task Group, has disappeared. There is now talk of a second SLEP for the elderly Tribals, which would extend their life to 2020, when they will be 50 years old. There will be, of course, a reluctance to pour any more money into technological renewal than is absolutely necessary for a ten-year life extension, leading

<sup>4</sup>Chris Wattie, “Few Air Force Hercules Can Fly,” *The National Post*, 5 July 2003.

<sup>5</sup>Capt Dave Muralt, “Improving Hercules Availability,” 2003. <http://>



<sup>31</sup>“ISTAR Omnibus,” slide 5.

<sup>32</sup>Wattie, “Few Air Force Hercules Can Fly.” This figure is slightly higher than the estimated cost using the algorithm in Table 4.

<sup>33</sup>The 2002 Long Term Capital Expectations Plan (Equipment) shows an average cost of \$302 per vehicle, but the specific vehicle on which this figure is based is not shown. This table uses a more conservative figure based on the US FMTV in Table 4.

<sup>34</sup>This is a “placeholder” figure. It is likely that the M-109 replacement will not be a tracked self-propelled gun, which would be too heavy to be air-lifted as part of the Medium Force concept. While a 120mm breech-loading mortar turret is available for the LAV series of vehicles, its range is substantially less than that of the M-109. A proposal has been made to mount the XM-777 lightweight 155mm howitzer on the LAV chassis, but this is still in the conceptual stage. HIMARS (a smaller version of the highly effective MLRS mounted on a wheeled chassis, which makes it light enough to be air-lifted by a CC-130) is not really suited to be a Close Support artillery system, although it is an excellent General Support system.

<sup>35</sup>Comment by a former Director of Land Requirements that the cost of the turret for the AGS had been estimated at \$2.3 million, whereas the basic Stryker chassis estimate was \$1.9 million. According to Global Security, the cost of the initial production run of 10 Stryker AGS was US\$4.8 million; <http://www.globalsecurity.org/military/systems/ground/iav-mgs.htm>

<sup>36</sup>This is expressed as “Future Years’ Requirements” in the *Reports on Plans and Priorities*.

<sup>37</sup>Government of Canada, Department of National Defence, *1994 Defence White Paper* (Ottawa: Canada Communication Group, 1994), 38.

<sup>38</sup>The 1988 contract cost per vehicle reported in the 1995-96 Estimates was adjusted to an estimated 2003 cost per vehicle, using the US Army Inflation Indices for FY2000 guidance; <http://www.amc.army.mil/amc/rm/html/inflation.html>

<sup>39</sup>This duplicates the cost of the current LSVW contract award.

<sup>40</sup>A “placeholder guesstimate”.

<sup>41</sup>This is modelled on the USMC H-1 upgrade at a 2002 cost per aircraft of

<sup>43</sup>This figure is the estimated shortfall in capital availability from the previous period.

<sup>44</sup>Department of National Defence, Report on Plans and Priorities 2001-

## CHAPTER THREE

# *The Personnel Crisis*

*Christopher Ankersen*

The significant hemorrhaging of trained and experienced personnel from the ranks of the military over the last few years has had and will continue to have an impact on readiness for some time to come, given the time and costs involved in bringing new recruits up to similar levels of training and experience.<sup>1</sup>

*Facing Our Responsibilities,*  
Standing Committee on National Defence and Veterans Affairs.

people commanded at all levels by experienced leaders who are promoted on merit gained through active service. Any armed force composed of too many young, inexperienced people is of doubtful utility, as is any force composed of too many senior people. Prudent national defence policy, therefore, must be aimed at maintaining a force with a healthy balance of youth and experience. It must also encourage a system of recruitment, personnel development, and retirement that cultivates a continuous current of people flowing through the ranks year by year. Failures or weaknesses in any of these areas of national policy will invariably be revealed when the system comes under stress, but by then the problem will be beyond immediate remedy.

Citizens cannot be made into soldiers overnight. Recruits cannot be made into fighters in a day, and leaders cannot be produced without the seasoning of experience. Regardless of their individual merits, people cannot be formed into effective operational units without time to train and to rehearse their collective duties. Armed forces learn by doing, and recruits learn their trade from the transfer of experience and from the lessons and the gospel taught by veterans. Break the current or interrupt the flow in any branch of the armed forces, and the follow-on force will, to some degree, wither and lessons will have to be relearned, perhaps at great cost.

The Canadian Forces is on the verge of a personnel crisis, not just of numbers but also of sustainment. As the following figures will illustrate, people of experience are leaving the armed forces early, the recruitment and training systems are erratic, the experience gap is too wide, and as a result, the competence and capabilities of the Canadian Forces may be much reduced.

Leading and managing people, or to use the current de-personified term “Human Resource management”, consists, according to the DND Human Resource (HR) “strategic vision” document (HR2020), of five stages: the identification of requirements, recruitment, training and development, employment and deployment, and retirement. Any decision made in any one of these stages may influence, for better or worse, decisions in every other stage. For example, if the HR requirements for recruits are misidentified – set too high or too low, for instance – then training, employment, and retirement policies may be affected.

More important, however, is the basic fact that if the personnel-planners get it wrong, their decision may have significant effects on every other

aspect of defence plans and costs and on the operational capabilities of the armed forces as a whole. Experience tells us, moreover, that the effects of personnel decisions tend to flow through the Canadian Forces for years, creating or sustaining problems over a long period. The policy taken  
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use old or inadequate vehicles and kit, soldiers may reconsider their line of work. If aircrew are too frequently forced to ask their families to make difficult sacrifices with respect to careers or education because they must return to operational duties, then they may find it in their medium- and long-term interest to opt for a shorter spell in the military than they originally intended.

All these factors are influenced by the world outside the Canadian Forces and especially by the state of the economy. When opportunities exist to find greater job satisfaction and a more stable life, many members of the Canadian Forces who have done their duty leave. The attitude of Canadians and political leaders towards the armed forces can greatly affect morale and decisions to go or stay. Civilian contractors, some of whom have large government defence contracts, regularly hunt down military talent and take service-trained people out of the Canadian Forces. Government departments simply do not seem able to react quickly enough to counter such raiding, and they let well-qualified, and in some cases critical, people walk away. It is strange that any organization would spend millions of dollars recruiting and training people and then let them leave for want of a few hundred dollars in salaries and benefits, but it is a dangerous game when this happens in the Canadian Forces, whose people cannot readily be replaced from the civilian labour pool.

Any discussion of defence policy must address the human challenges facing the Canadian Armed Forces and, in doing so, must answer four basic questions: What is the nature of the current problem? What caused this problem to occur? What are the implications of the problem, in terms of both organizational effectiveness and costs? What can be done?

The answers to these questions reveal a system under severe strain, with sizeable gaps in the personnel strengths and falling levels of quality and experience in critical occupations within the CF. These intertwined problems will be costly to repair. But even if nearly unlimited amounts of money were available, it would take several years to (re)create a personnel system suited to the demands of policy and to rebuild and transform essential occupations under experienced leaders in order to provide a healthy and sustainable armed force for Canada.

Of all the problems confronting personnel managers in the Canadian Forces, two are in the most urgent need of repair: maintaining establishments at full strength and high degrees of competence. The Canadian

Forces simply has too few trained personnel to fulfil the myriad missions and obligations governments have given it. Ships are tied up awaiting crews; aircraft are in need of ground crews and pilots; and many members of the Canadian Forces are deploying to dangerous, demanding missions too soon after returning home from other missions. In 2003, the number of operational waivers – exemptions from the rule that prohibits CF personnel from deploying within 12 months of a previous overseas mission – have increased. Operations in support of ongoing missions – in Bosnia, for instance – and the war on terrorism have created such demands for operational units that the army and the navy have admitted in public that their people are or soon will be pushed to the limit, and perhaps beyond.

The Liberal government's defence policy, *1994 Defence White Paper*, allowed for a regular force of 60,000 personnel on the basis of 1994 demands. This figure represents every person in uniform, in-

reality. Moreover, the gap will have long-term consequences for defence policy as the quality and quantity of members available for duty drop. One cannot, for instance, simply hire unit commanding officers or even junior leaders because they must be developed in-house and matured through

Officials sometimes assert the Canadian Forces is meeting over 96 percent of its personnel requirements, but this figure does not clearly indicate the effect that the manning shortfall of more than 4,000 trained soldiers, sailors, and airmen and -women is having on the armed forces as a coherent operational entity. Indeed, the problem is so severely debilitating that senior Canadian Forces leaders believe this critical shortfall has severely affected the ability of the Canadian Forces to train and generate forces. The current TEE level of the CF is insufficient to meet operational commitments/tasks.<sup>2</sup>

The numbers problem in the Canadian Forces tells only one side of the personnel story. Quality, as well as quantity, is important in creating a strong and effective military. Ideally, the armed forces would prefer a military population that is balanced among occupational classifications and between junior and senior members. Senior members are valuable not only for their inherent experience, but for their qualities as leaders, mentors, and trainers for the next generation. Therefore, a stable personnel profile would represent a balanced distribution of ages and experience. However, the current population of the Canadian Forces is not stable. The solid line on Table 3.2 represents the current profile of non-commissioned members, but the officer profile is similar.

As the bar graph in Table 3.2 explains, the Canadian Forces' population is seriously skewed in three areas, which are indicated by the bars either well below or well above the line. The portion of the population with 1-4 years of service (YOS) is too large; that with 6-11 YOS is too small; and the portion with 12-18 YOS is also too large. At the 6-11 YOS level of experience, one would expect a non-commissioned member (NCM) to have reached the rank of Master Corporal/Master Seaman to Sergeant/Petty Officer 2<sup>nd</sup> Class. These people hold key junior-leadership positions, as commanders and supervisors of infantry or naval sections or air-maintenance and flight crews, for example. With insufficient numbers, these key positions often go unfilled or are filled by more junior (i.e. less experienced, perhaps underqualified) personnel. This deficiency will progress through the Canadian Forces as the graph shows, as this cohort or generation, serves out its time in the military. The shortage of sergeants today is propelled into a shortage of qualified warrant officers tomorrow.

**Table 3.2**  
**Ideal and Actual Population Distribution (NCM)**



Source: ADM (HR-MIL) Study.

At the 12-18 YOS level, there is a surplus. On the one hand, this might be a good thing if these personnel can help make up for the shortfall in the number of junior leaders. However, as 20 years of service marks a significant exit point for CF members,<sup>3</sup> many members who belong to this cohort might leave within the next two to eight years. This would cause another population dip, further depleting the stock of experienced NCMs.<sup>4</sup> Two such drops in succession would leave the CF virtually denuded of good-quality NCMs to fill second-level NCM positions in operational and technical units and training establishments.

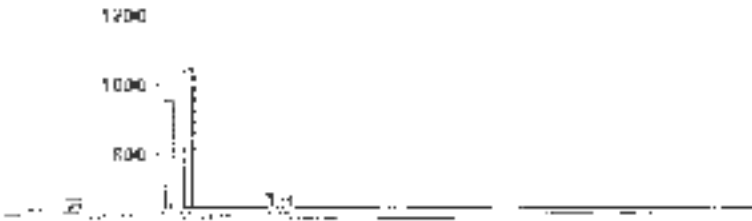
The portion of the population with less than four years of service (Table 3.2 above the stable line) represents those personnel enrolled since 2001, during what might be described as the recruiting blitz.<sup>5</sup> While this increase in personnel may boost the overall numbers of personnel within the CF, other outcomes are likely to be less positive. First, the effect may be short-lived, given that many leave after they complete their first Basic Engagement (3 YOS). Alternatively, if the majority do remain in the CF,

they simply constitute another personnel “bubble” requiring inordinate attention as it progresses through the next decade.

The personnel imbalance can be illustrated in another way. Measuring the ratio of junior to senior personnel makes the degree to which the CF population is skewed even more apparent. Again, there is an ideal balance: one senior member (16+ YOS) for every junior member (6-15 YOS), allowing for the right mix of trainees and instructors, leaders and followers, and mentors. Statistically, this ideal balance would be represented by an “hourglass” index of 1.0. The current and projected distribution of experience, as measured by YOS, however, indicates that the ideal hourglass will be distorted by 200 percent over the next ten years. This is demonstrated in Table 3.3, Combat Arms Non-Commissioned Members distribution by Years of Service.

An examination of each occupational classification would reveal that some occupations are more seriously stressed than others. Within the army,

**Table 3.3**  
**Army NCM Combat Arms Population**



Source: LF AMOR. Peoplesoft information, June 2003 (MOC 011, 021, 022, 031).

for example, the combat classifications are suffering from significant population distortions. There are too many officers with 12-18 years experience, particularly in the Artillery, which means that a large cohort of aging officers is blocking promotions. When young officers see little or no possibility for advancement, they may go to other classifications, take unexpected releases, or at least, leave the CF on completion of their Terms of Service. The abundance of persons with over 12 years of service is anticipated to drive the numbers with 6-11 YOS to new lows in the coming years.

At the NCM level, the story is quite different because there are, and will be, too few senior leaders. (See Table 3.3) As explained above, this means that there are not enough experienced personnel to fill operational positions in units and training establishments. Some positions must go unfilled, but which ones: Instructors at training establishments? Support staff at Reserve units? Junior commanders in operational units? A shortage of instructors is a major contributing factor to the army's inability to complete more than half of its individual training obligations in 2002-2003. The problem is particularly pronounced in field engineer regiments and infantry battalions, where the youngest soldiers are being led by soldiers with not much more experience than their charges.

Across the Canadian Forces, the experience profile of today is significantly different to that of one or two decades ago. Twenty years ago, the CF had a near-ideal balance of adequately trained recruits, experienced leaders, and instructors, as well as a good distribution of long-serving personnel. This more-even, close-to-ideal profile of 1992 has been replaced by a population marked by a shortage of experienced junior leaders and a surplus of new recruits.

### WHY DOES THIS PROBLEM EXIST?

The complexity of the military Human Resource system makes it difficult to pinpoint relationships between causes and effects. Many factors contributed to the current state of affairs: demographics of Canadian society, quality of life and other factors affecting retention, the nature of the Terms of Service and the Force Reduction Program of the 1990s, the reversal of some of these policies, and poor recruiting practices generally.

### **Demographics**

Like all western societies, Canadian society is changing. Research into social values has indicated that Canadian society, the pool of potential recruits for the Canadian Forces, is generally concerned with maximizing individual welfare. People are also more suspicious of authority than in other times.<sup>6</sup> The portion of Canadian society traditionally expected to be available for military service (those aged between 16 and 30) holds different values than earlier generations. Adams and Langstaff, relying on Environics data, assert that “Canadians are moving rapidly into a post-modern phase. Our emphasis is shifting toward greater well-being, harmony, and a less traditional quest for spiritual meaning. Canadians, in fact, place greater emphasis on personal freedom and harbour less deference to traditional institutions such as the state, the family, and religious organizations.”<sup>7</sup> This situation and these attitudes make it difficult to recruit through traditional themes and challenging to retain people





recently (by over 500 percent, according to sources) and the full effect of Operation Athena – the ISAF deployment to Afghanistan – has yet to be felt. This mission will surely increase personnel dislocations, a conclusion noted by the Chief of the Defence Staff, General Raymond Henault, who candidly warned the government that “the reality of [the Kabul mission] means that we do have very limited ability to take on other missions during that time frame, probably for as much as 18 months after we deploy to Afghanistan with our land force.” Lieutenant-General Mike Jeffery, former Chief of the Land Staff, said some time ago that “the mission puts the overall cohesion and sustainability of the army” at risk.

While this deployment policy may control somewhat the pressures to send people on operational assignments, it in no way limits other taskings. Training establishments in the CF do not have enough permanent staff to meet their requirements, and therefore rely on personnel temporarily assigned from other units to fill these roles. A sergeant, for example, could return from a six-month tasking in Afghanistan and then immediately be required to leave home again for several months to instruct on a course at the Combat Training Centre or the Recruit School. While not required to deploy in harm’s way, this sergeant is effectively assigned to an internal deployment, with much the same effect on his or her quality of life as an overseas deployment.

If one looks at the total amount of time that Canadian Forces personnel spend away from home on duty, the full dimensions of the problem become starkly evident. The combined tempo of operational and routine tasks in the Canadian Forces during the summer period (the busiest time for training-related tasks) shot up in 2003 to over 4.5 times the level of just three years ago.<sup>9</sup> Again as senior leaders have reported, “Force employment has come at the cost of force generation. Current force employment/commitment levels limit force re-generation capacity. Sustained high levels and duration of operational, individual and general tasks are placing unacceptable burdens on personnel.”<sup>10</sup>

In addition to the specific challenge req0209 52- alue.0062y r79.6 Tcratex(els.

that some will convert this frustration into a “vote with their feet”, and leave the Canadian Forces. Often there is little officers can do to remedy this problem because the source of the perception that the Canadian Forces and the work done by its members are not appreciated lies at the centre of government.

### **Terms of Service and the Force Reduction Program (FRP)**

According to Canadian Forces demographers, the single biggest factor influencing retention is Terms of Service (TOS), i.e., the parameters of the employment contract detailing how long members must serve, the size of the pension they are eligible for, etc.<sup>12</sup> If the incentives exist for service members to stay, they will stay. If the TOS favour a member's early release, he/she will go. As a result, it is critical for the CF to get the details of the TOS correct because they have a lasting and significant impact on force levels. Planners, therefore, have attempted to make TOS both more appealing and more restrictive, so as to reduce incentives to leave. For example, the Compulsory Retirement Age (CRA) has been changed from 55 to 60 years of age, and more members have been given “intermediate” and “indeterminate” contracts. On the other hand, members are no longer allowed to leave the Canadian Forces before completing the full terms of their service contracts.

It is questionable, however, whether these changes will have any lasting effect. For example, on average less than 1 percent of the CF population and only 8 percent of the annual total releases from the military include CF personnel who actually completed their terms of service. By far the largest number of releases are “unscheduled,” Tw (iement big)-9 vvoe2mFyTxa8g

out program. Since little effort was made to restrict the departure of mission-sensitive members, many people who were or soon would be in demand left, taking with them years of valuable experience. The reduction program was accelerated, restricting recruiting in several Military Occupation Classifications (MOCs). These twin policies had the double effect of chopping two ends – the older, experienced portion and the younger replacement portion – from the personnel stream. The effects of these policies, moreover, are now travelling through the Canadian Forces and are evident in the population profiles of the armed forces.

### **Weak Recruiting Practices**

The CF is constrained in how it can address the issue of personnel replacement. It cannot hire laterally, as the private and public sectors can. Military personnel management must follow the order laid out in the theoretical life cycle described above. Recruiting, therefore, is the only way to bring new personnel into the Canadian Forces. As we have already seen, however, recruiting large numbers of people is not always a viable, sustainable, long-term solution to the people problems. Some may see throwing open the recruiting doors, as is being done in 2003, as a “quick fix”, but it may create other negative and unintended consequences. When, for example, the navy faced a critical personnel shortfall, large numbers of sailors were recruited. Unfortunately, most of the shortages were in technical trades, but to keep the numbers up, many of the personnel recruited were unsuitable for these highly skilled, specialist trades and were assigned to the more general “Boatswain” occupation. Today, the Boatswain trade has a surplus at the junior-leader rank levels, while the technical trades are still under strength. Furthermore, once the surplus was noted within the Boatswain trade, general naval recruiting was halted, creating a new shortage in the number of entry-level Boatswains. These types of stop-start reactions contribute to the creation of “bubbles” and “dips” in population profiles, causing turmoil in the personnel system for years into the future.

This example illustrates how mistakes made during the recruiting phase can lead to severe consequences that are difficult to manage and even harder to correct later. By focussing on recruiting as the sole quick-fix, the Canadian Forces does itself a disservice. Retaining the personnel already in the service (and maintaining a population profile close to the ideal) is a sounder strategy. In fact, the costs associated with recruiting,

especially in training and attrition can easily wipe out limited gains made through increased recruiting. For a number of reasons, as we shall discuss in subsequent sections of this chapter, retention is key.<sup>13</sup> Or by way of analogy, it is better to seal the leaking bucket than to waste endless effort trying to keep it full.

## THE NATIONAL DEFENCE IMPLICATIONS OF THE PERSONNEL CRISIS

The preceding sections spelled out the extent of the personnel crisis, but the critical question remains: so what? Five key implications arise from the current personnel situation within the CF: training difficulties, human resource management challenges, deepening retention problems, a reduction in operational effectiveness, and the significant amount of money that the personnel crisis is costing the Canadian Forces.

### **Training Difficulties**

As discussed above, the largest proportion of instructors within the Canadian Forces consists of “incremental staffs”: personnel serving in units and other locations who are temporarily tasked in a training establishment. As the number of experienced officers and NCMs changes, the availability of instructors varies. A shortage of instructors means that more junior personnel are often tasked to fill in when more appropriate instructors are not available, and that many positions are filled by a shrinking pool of potential instructors who are required to teach more often and for longer periods. Since this effect means that incremental instructors will be away from their usual home units for longer periods, personal dislocations increase, exacerbating the problems associated with a randomly dislocated life, especially for married members.

Fewer instructors usually means fewer and smaller training courses, which is at variance with the demand to train large numbers of new recruits and junior personnel who need advanced qualifications if they are to fill in behind the older cohort. The Years of Service profile of the Canadian Forces NCM population (illustrated in Table 3.2) shows a dramatic increase in the number of personnel with 0-3 YOS, and they all need to be trained. As recruiting targets will continue at an elevated level for several years, the demand for training will necessarily remain high. Bottlenecks in the system are already a fact of life, forcing new entrants to wait for

courses, often while performing boring or menial tasks in the meantime. As this practice increases, it will have a negative effect on retention. These bottlenecks also mean that career and leadership courses for personnel already in the system are delayed or deferred. This consequence not only causes retention problems but also may lower the quality of this portion of the population, as well as their readiness and availability to assume greater responsibility in the future as older members reach their compulsory retirement age.

An additional training difficulty occurs as a result of attrition among those personnel with 6-15 YOS. In some cases, experienced personnel leave just as they become valuable to the military. This places a double burden on the training system as it struggles to develop these personnel, only to suddenly and unexpectedly have to train a replacement. The problem is particularly acute in Maritime Surface/Sub-Surface (MARS) officer classifications. It can take in excess of seven years for these officers to reach the stage in their careers where they become “directors” – fully qualified officers who run the various departments on a ship. By the time officers become directors, many have only a few years remaining in service before they may leave the Canadian Forces with a cash bonus for completing their contract. Table 3.4 shows that in the MARS classification, the TEE gap at the Lt(Naval) rank is only 9 percent. However, the final column illustrates that if the number of Lt(N)s who are not directors is factored in, the real deficit is over 20 percent.

**Table 3.4**  
**MARS TEE- TES Gap, Highlighting the Shortage of Directors**

	<i>Capt (N)</i>	<i>Cdr</i>	<i>LCdr</i>	<i>Lt(N)/SLt</i>	<i>Lt(N)/SLt (Directors)</i>
TEE (Establishment)	42	110	284	448	448
TES (Strength)	35	105	256	407	354
Difference	-7	-5	-28	-41	-94
TEE filled (%)	83%	95%	90%	91%	79%

While the overall size of the MARS-officer deficit may be manageable, the fact that there are many vacancies at the director level indicates that numbers are not the sole problem. Rather, the loss of critical exper-

**Table 3.5**  
**Required Total Paid Strength versus Total Authorized Strength**

<i>Year</i>	<i>2000/01</i>	<i>2001/02</i>	<i>2002/03</i>	<i>2003/04</i>	<i>2004/05</i>	<i>2005/06</i>
Required TPS	58,852	59,251	61,432	62,150	62,250	62,450
TAS	60,000	60,000	60,000	60,000	60,000	60,000
% TAS	98.1%	98.7%	102.4%	103.6%	103.8%	104.1%

The swelling of the BTL to accommodate increased recruiting is causing the mix of officer-entry plans to be re-evaluated. Officers who enrol with degrees are designated Direct Entry Officers (DEO) and spend only two years on the BTL. Those officers who attend The Royal Military College or are sponsored in their undergraduate education are part of the Regular Officer Training Plan (ROTP) and spend five years on the BTL. The implications of this difference are significant, especially in a situation where the authorized strength of the Canadian Forces cannot be exceeded. CF demographers believe that a decrease in the annual enrolment of ROTP and an increase in DEO recruiting by 300 personnel would increase the TES by 900 personnel. But this solution seems out of reach.

Canadian Forces human resource modelling illustrates the situation dramatically.<sup>16</sup> Given that the ROTP is the principal means of officer enrolment, it is not likely to be discontinued in favour of the DEO program. Therefore, under these assumptions and even if the TPS were allowed to exceed the authorized strength of 60,000 people, the CF could not reach TEE until 2012. Even under best-case assumptions regarding recruiting targets and following projected attrition rates, this analysis means that a fully trained and effect061 6l 2,91CO7 discontinEhe Pccloa0 [(f1easg pr)7(ojeh



are eliminated and that lower than expected attrition rates are consistently achieved, the Canadian Forces could not reach its TEE until after 2030. These startling projections highlight another key aspect of interdependencies within the personnel system. There are no cheap, quick fixes. Every suggestion for correcting the personnel crisis must be tracked well into the future to avoid importing into that era problems caused by trying to manage current difficulties with short-term fixes.

## HUMAN RESOURCE MANAGEMENT CHALLENGES

One of the most frustrating aspects of the Hourglass Experience Index imbalance is succession planning. At an Hourglass Index of 1.0, succession planning (including promotion forecasting and career development) is a simple matter: as experienced members of the population advance or retire, replacements can be identified in the slightly larger, less experienced cohort behind them. For example, let's assume Cohort X provides commanding officers (COs) for eight air force squadrons. Those eight members of Cohort X will complete their command tours; some will be promoted, some will move laterally, and some will choose to leave the CF. In this way, Cohort X gets smaller over time. Meanwhile, in order to manage the need to find eight new commanding officers, one need only look to the more junior, but somewhat larger, Cohort Y. Ideally, it would be possible to identify more than eight potential candidates, prepare them for command and promote some of them. In the end, choosing eight COs would be a matter of selecting the best people from Cohort Y.

If, however, the cohorts do not follow the ideal profile, succession planning is not as straightforward. If Cohort X is too large, it may be necessary to find worthwhile employment for those not chosen for command and for those progressing past that milestone. Without a degree of manageable attrition, the problem becomes one of occupying people's time with meaningful and valuable work. If, on the other hand, Cohort Y is too small, it becomes difficult to find enough properly qualified personnel to fill important positions. Either these positions must go vacant, or less capable individuals have to be employed.

A final problem of human resource management is the temptation for managers to opt for short-term solutions to fix immediate and pressing problems. The case of the surplus Boatswains (discussed above) illustrates the results of this practice. Other examples of this habit can be

seen in the combined effects of the shortage of director-level officers in the navy and the high BTL-to-production ratio posed by ROTP entrants.

when an aircraft is conducting search and rescue operations in bad weather, or when a ship is crossing a difficult stretch of ocean. With fewer people, some of whom may be underqualified for the jobs they hold, the ability to meet demanding standards posed by operations is jeopardized. In a few words, capabilities are eroded, and some may collapse entirely and in very inappropriate and dangerous circumstances.

Not surprisingly, it is the operational classifications that are most affected by the personnel crisis. People in operational units in all capability fields tend to have the highest operational tempo in the least attractive circumstances and to suffer the greatest long-term post-traumatic stress. Consequently, their attrition rates follow suit. The examples are sober-

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**Table 3.6**  
**IT&E Costs by Managing Authority, 1997/1998**

<i>Managing Authority</i>	<i>Training Days</i>	<i>Cost (\$ millions)</i>
Maritime	289,700	288
Army	376,210	736
Air Force	201,090	380
HR(Mil)	589,090	503
Others	110,099	70
<b>Total</b>	<b>1,567,080</b>	<b>1,977</b>

**Table 3.7**  
**IT&E CF Totals, 1997/1998 (Rough Order of Magnitude +/-10%)**

<i>Account</i>	<i>Cost (\$ millions)</i>
Cost of Personnel in IT&E	481,090

**Table 3.8**  
**CF Officer Occupations: Cost per Development Period**

By this calculation, the CF annual expenditure for DP1 and DP2 training in 1997/98 was 88 percent of \$1.977 billion, or \$1.740 billion.

In 1997/98, the intake of the training system was 2,600. Personnel on the BTL and the Advanced Training List (ATL) did not exceed 4,000, and the total annual cost was \$1.74 billion. At a time when the CF is taking in 5,000 recruits per year and has a BTL and ATL of over 8,000,

one would expect IT&E costs to reflect a proportionate increase (i.e., a doubling) to \$3.5 billion, *assuming that savings of scale can be achieved.*

*This analysis suggests that an additional \$1.5 billion a year must be added to the defence budget for IT&E for each of the next ten years if the personnel deficit is to be eliminated.*

## WHAT CAN BE DONE?

Three key actions should be taken soon to address the mounting personnel crisis within the greater CF system. They are drastic measures, but as the evidence in this chapter has illustrated, the CF has entered drastic times, and if nothing substantial is done, then the capabilities of the Canadian Forces will rapidly collapse in kind, quantity, and quality.

**1. *The total authorized strength of the CF should be incrementally increased to 85,000, or else a significant permanent reduction in operational taskings must be made.*** The operational activity level and the internal tasking level indicate that there are too few members in those classifications that are most in demand. Comparing CF personnel and operational activity levels in 1994 to operational activity levels in 2004 implies that a force establishment of 85,000 would be appropriate. If the CF personnel strength is held at 60,000, then the following policies should be brought into force.

**2. *The Individual Training and Education system funding must be increased by approximately \$1.5 billion.*** The current IT&E system is under-resourced for a Total Authorized Strength of 60,000. Restoring the IT&E system should take priority over every other activity. Otherwise, given current trends, the CF Total Effective Strength will drop to about 45,000 by 2010.

**3. *Given the skewed distribution of personnel in the CF, the paid ceiling must be raised to or above 62,500 for several years to restore and sustain the trained establishment objective of 54,500.*** This means increasing the Total Authorized Strength and funding this difference.



<sup>14</sup>The TPS is made up of the TES+BTL+some other categories, including the SPHL; 97 percent of the TPS is comprised of the TES+BTL. Source: ADM (HR-Mil) Study.

<sup>15</sup>The shortest time on BTL is two years; MARS candidates can be on BTL





## CHAPTER FOUR

# *The Gathering Defence Policy Crisis*

*Howie Marsh*

We are going to be limited in our ability to provide any sizeable land force contribution elsewhere on the international scene for the 12 months ... [after the Afghan deployment ends in 2004]<sup>1</sup>

*General Raymond Henault*

### THE LIMITS OF RISK MANAGEMENT

The recent history of the Canadian Armed Forces and defence policy is a story of risk management. Unfortunately, the risks will shortly become unmanageable and crisis management will soon replace risk management, not only in defence policy but also in foreign policy and in military responses to domestic emergencies. Since the mid-1980s, successive Canadian governments have provided ever-decreasing expenditure allocations to defence policy, while maintaining, rhetorically at least, an activist international dimension to Canada's foreign policy. This perennial theme has undermined successive defence policies and plans and

core capabilities. The gathering crisis is not simply about the loss of these capabilities, but about the effects of this loss on the larger issues of national sovereignty, independent foreign policy, support to the United Nations, and all aspects of relations with the United States in a world of fierce security challenges.

The approaching crisis in military capabilities is the result of the failure of governments to adequately maintain and renew core capabilities and personnel strengths in the Canadian Forces in the face of obvious threats and the demands of operations in the 1990s. The collapse of the “future force” will soon define Canadian defence and foreign policies in ways that will surprise political leaders and the public in general. Recovering from this situation will take many years and large expenditures. In the meantime, the government and its diplomats will be forced to find, if they can, innovative ways to defend and advance Canada’s interests and responsibilities in the international community.

Examples of this crisis are already at hand. In the spring of 2003, the defence minister announced that it will be at least a year before the navy can send a ship to join a standing commitment to the NATO fleet. At the April session of NATO’s Military Committee, Canada’s Chief of Defence



personnel – such as military engineers, command and intelligence staff officers, and technical specialists in all branches – were let go, and it will take years to recover from this situation. Developing a junior leader can take five to eight years of training and experience, and more than 15 to 20 years are required to develop a unit commander.

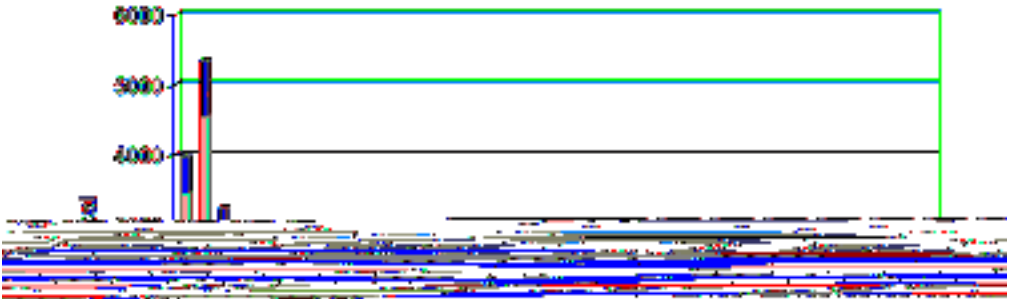
Acquiring equipment and bringing it to operational standards require a minimum of 8 to 12 years under present assumptions. Even the seemingly straightforward project to replace combat clothing started in 1992 and was not completed by 2002. More complicated acquisitions like the Unmanned Aerial Surveillance Target Acquisition System (UASTAS) commenced in 1974 and might be partially satisfied in 2004. A replacement for the Sea King Maritime Helicopters was decided before 1983 and then cancelled after 1993. The actual replacement of the maritime-helicopter capability is still at least a decade away, and the new fleet may not be operational until 2013.<sup>4</sup> The Canadian Forces has lost so much momentum in core areas that bringing major capabilities to a full operational state is likely to take one or two decades.

The Minister of National Defence recently announced that the government would proceed with the procurement of the army Intelligence, Surveillance, Target Acquisition, and Reconnaissance system (ISTAR), which is a welcome development.<sup>5</sup> However, nothing of real substance will happen until the main acquisition contract is signed and the prime contractor publishes dates for equipment delivery and schedules for training conversion. At the present time, fielding and initial training on the army ISTAR are planned to occur in 2010-2013 – assuming, of course, that DND can secure capital funds, which seems doubtful.<sup>6</sup>

Every defence White Paper is printed with good intentions, but many of these intentions fail to materialize for want of money and political persistence and oversight of the defence establishment. Delays in making choices, changed and changing priorities within the armed forces, unexpected international events, and domestic concerns interrupt the pur-

The Canadian Forces is on the verge of a population collapse. Table 4.1 illustrates the Canadian Forces Regular Force population by Years of Service. If those in the 12-19 YOS “bulge” leave early, they can be replaced only by the 4-11 YOS group, who are few in number and short on experience. Close to 25,000 service members are eligible for early retirement this decade, and they will closely monitor government attitudes and actions in matters of national defence. If they are dissatisfied or overstressed by unreasonable demands, then this cohort may vote with their feet. They will leave in their place the next generation, which not only lacks experience but can provide less than half the number of people required to sustain the extant defence structure. Serving members will need to be convinced by the next government that the Canadian Armed Forces has a meaningful future.

**Table 4.1**  
**CF Population by Years of Service**



Source: Peoplesoft information, June 2003.



current operations, a prudent government would activate appropriate re-



As the ISAF cost was not forecasted in the O&M business plans, it is not clear how this operation will be funded. Although some money has been allocated by government to cover some costs, DND will be required to absorb future costs; and funds for this commitment can be found only by turning to the capital account and by deferring now lower-priority projects.<sup>8</sup>

What is more important to note is that this operation, like all other *real* operations, cannot be controlled in the way training and managerial project can be because the demands of the operation are largely unknown from day to day. All cost estimates are contingent on events that arise in the field, and at any time they may increase dramatically. Governments cannot walk away from such undertakings; nor can they demand that soldiers “do more with less” or raid the capital account endlessly – for the simple reason that this account is finite. The total dollar-cost of the mission to Kabul, along with all the other ongoing international missions of the Canadian Forces, will not likely be known until many months after the units return to Canada. The next government, therefore, may find itself trapped in “a money-pit” of commitments demanding ever-increasing and uncontrollable financial support.

The essence of Canada’s crises in national defence and foreign policy is that elements of capabilities and entire capabilities are being consumed more rapidly than they can be replaced. The nature of this problem is hidden from public view by efforts to keep the present force functioning, but a close examination of activity costs as reflected in the O&M budget reveals plainly the seriousness of these approaching crises. Attempting to do more with less demoralizes and unfairly penalizes those Canadians who are on the front line. Borrowing from the future force to provide for the present force is simply a strategy that will accelerate the disintegration of both parts of the armed forces.

## THE TRAINING CRISIS

The cost of training an individual from enrolment in the Canadian Forces through to the end of basic and trades-qualification training is a major factor in forecasting the capacity of the Canadian Forces to conduct operations.

For a number of reasons, but primarily because it was easier to downsize than to sustain a fixed personnel strength, the Canadian Forces overshot the Regular Force personnel reduction goal (60,000) in the years

1999-2001.<sup>9</sup> This problem was created by an honest, but desperate, attempt to find money in the personnel budget to transfer to the collapsing capital budget. When the defence minister reversed the policy, officials were compelled to more than double the planned annual recruiting intake to rebuild and stabilize the personnel strength at 60,000 once again.<sup>10</sup> (See Table 4.3.) However, the intake plan failed to address the consequences of this policy reversal in terms of training and cost and the effect it would have on the “individual training system”. Rather than solving the capital imbalance in the budget, the on-again-off-again process worsened the overall circumstances of defence expenditures.

**Table 4.3**  
**Regular Force Enrollment (Intake), 1998-2004**

<i>Fiscal Year</i>	<i>Regular Force Intake</i>	<i>Remarks</i>
1998-1999	2,600 persons	Actual
1999-2000	2,918	Actual
2000-2001	3,220	Actual
2001-2002	5,404	Actual
2002-2003	6,100	Estimate
2003-2004	5,400	Planned

The Canadian Forces follow a career-development programme based on qualification and rank. For the purposes of this study, only the first “Development Period” (DP1) is discussed. DP1 normally includes basic recruit-training, special-to-classification operational and technical training, and some advanced-classification training. To illustrate, a soldier who joins the armour branch completes Basic Recruit Training at Saint-Jean, QC, then proceeds to the Armour School in Gagetown, NB, for Qualification Level 3 (QL3) Crewman and Armour Reconnaissance Tactics training. After some time at an armour unit, the newly minted crewman may undergo QL4 Crewman training, either at the unit or at a formation “Battle School”. Upon completion of this training, the crewman is eligible for Development Period 2 (DP2) training, which includes army junior-

leadership courses. The total DP1 training time for a crewman is 180 days. Many classifications require more time, but no recruits can be deemed qualified and ready for deployments with a unit until they have successfully completed DP1 training.

The cost of individual training for the entire Canadian Forces was determined for this analysis by using individual-training criteria for all classifications and cost data from a 1997-2000 DND study.<sup>11</sup> The DP1 cost for the entire Canadian Forces, at a time when Regular Force annual intake was averaging 2,600 recruits a year, was \$1,028 million per year ( $\pm 10$  percent). Regular Force recruit intake has doubled since 2001, but the DP1 individual training system has not received a doubling of resources. This means that money was not available to provide for training needs, and because the money is not available to purchase training equipment and to increase training staffs, DP1 candidate training is taking twice the normal time to complete. This extra time and these extra recruits significantly increase O&M costs. It is, arguably, the failure to increase funding









- Finding an adequate share of the defence budget to provide funds to support capital investment to maintain military capabilities for the future force is a longstanding policy difficulty in DND. But today, after more than ten years of under-investment, and as operations increase and equipment is consumed at unplanned-for rates, the problem has become a crisis beyond the capability of DND to manage, let alone solve.
-



**Table 4.4**  
**Canadian Forces Capabilities at a Glance, 2003-2010<sup>21</sup>**

<i>Capability</i>	<i>State</i>	<i>Remarks</i>
Strategic Command	High Risk	<ul style="list-style-type: none"> <li>• Shortage of qualified personnel</li> <li>•</li> </ul>

*Command.* Early retirements in the 1990s resulted in a shortfall of command and staff expertise in the Canadian Forces. Underfunding of training and development programmes (especially at the strategic level) has exacerbated this problem by placing inordinate burdens on those officers who remain in command, especially those in expert staff positions.

*Logistical Support.* In the past, the Canadian Armed Forces were highly valued. Largely because of its operational and logistical expertise and excellent military support capabilities, international organizations usually looked to Canada to provide major or leading elements of multinational operations. Today, although the individual and unit expertise remains (albeit at much reduced numbers), the logistical backbone of the Canadian Forces is crippled. Attempts to carry out demanding missions in Zaire and in other regions in the 1990s were exceedingly difficult and expensive, often requiring officers to construct ad hoc command and support arrangements and DND to hastily purchase or rent capabilities that were once common in the Canadian Forces. More worrisome is the fact that as support capabilities, including people, are used up, few replacements are either available or on the horizon to provide for future operations.

*Intelligence and Information.* The Canadian Forces have critical deficiencies in intelligence and command staffs. The intelligence and information crisis is likely to worsen because of two external factors: the merging of US Space Command and Strategic Command (STRATCOM) and the US Armed Forces Command's adoption of Commander-in-Chief 21<sup>st</sup> century (CINC21) command protocols.<sup>22</sup>

As the US Armed Forces move to their second-generation global command network, and as their space surveillance assets are moved away from NORAD (where space information was shared with the Canadian Forces), NDHQ will need to find the means (both electronic and political) to plug into our southern neighbour's intelligence and information assets if Canada hopes to maintain a viable Canadian national-surveillance system.

How much is Canada willing to pay for national surveillance? This issue, perhaps, has already been decided by the shortfall in the capital account. It is unlikely that the defence programme will be able to sustain this priority in addition to other costly projects now in train or on the horizon. Unfortunately for those officials who are trying to keep the

programme in balance and on track, the effects of operations and the fast deterioration of other critical capabilities will soon outpace their work.

*Strategic Mobility.* Save for the Airbus aircraft that transport Cana-

at the same time, transform its doctrine, strategy, unit composition, and technical capabilities to match the pace of change in military, national, and international affairs. To be effective, this process must be continuous

and worn, and the future force will be a mere image of what Canada's defence policy and prudent political leadership will demand.

The crisis is not simply a problem for military leaders and a few officials and does not lie in the disappearance of vital military capabilities; the crisis is not only about a hamstrung foreign policy. The real cri-

<sup>13</sup>Interview of CLS Business Planning staff, May 2003; based on CTC Co-ord Cell and CLS Task Co-ord data. The Canadian Forces Tasking Program, managed by DCDS, tracks movements of all tasked individuals.

<sup>14</sup>Army Training and Operations Framework 2003, managed by Director Army Training (Ottawa), illustrates that each OP ATHENA Roto 0 requires one brigade (2 Brigade – Petawawa); Roto 1 requires another brigade (5 Brigade Valcartier). Canada's third brigade (1 Brigade – Edmonton) is committed to sustaining the other major peace stability operations (OP PALLADIUM).

<sup>15</sup>This is based on the author's extrapolation of the data made available in Directorate of Operational Research (Corporate) report, *Assessing the Wellness of the Canadian Forces*, July 2003.

<sup>16</sup>Military Occupations Classifications briefing to Assistaigade



## CHAPTER FIVE

# *A Summary of Major Findings*

We treat the military very well. They are very well equipped.

*Prime Minister Jean Chrétien*

*Kabul, October 2003*

Military capability, a system of systems, is the product of effective equipment, trained personnel, appropriate doctrine, command and communications systems, and logistical support which, when used in unison, enable the commanders to accomplish missions. The capability of the Canadian Armed Forces to meet government defence objectives has been eroding, is eroding, and will continue to erode; it cannot be sustained under present policies (Table 5.1). In some core capabilities, all of the major components are failing together while others are hamstrung by particular deficiencies. Two essential components are specifically endangered today: there are simply not enough trained people, or the facilities and resources to train them, to ensure that the Canadian Forces will be operationally fit in the future. Second, major equipments are failing from age and use, and the plans to replace them are inadequate to the demand.

This short summary deals primarily with the deficiencies in the capital-account portion of the defence budget and particularly with the shortfall in capital funds meant to be allocated to the acquisition of modern equipment. It is, as this study has attempted to explain, critically important to understand that core military capabilities are composed of systems within a system and that no credible capability exists if any part is defective or deficient. Nevertheless, this summary addresses mainly the equipment limitations that exist today or that will occur as older stocks disappear and are not replaced in a timely fashion. It is self-evident that without modern equipment, training cannot occur, command and support systems are unnecessary, people cannot be employed, and commanders cannot accomplish their missions.



The capabilities of the Canadian Forces have been declining for about four decades. In 1985-1987, the Canadian defence budget accounted for 2.2 percent of Canadian Gross Domestic Product (GDP). Since 1994, the

Canadian Forces) for fiscal year 2003/2004 was \$1.25 billion. By this measure, the extant structures and activities of the Canadian Forces are unsustainable.

According to National Defence Estimates, 2003/2004, the total forecast cost of all peace and stability operations, *excluding* International Security Assistance Force (ISAF Kabul), is \$1.25 billion. The cost for ISAF for fiscal year 2003/2004 is estimated at \$600 million, and this operation (the full cost of which will not be known until the mission is completed), when added to the unreported full cost of peace and stability operations for the Canadian Forces in 2003/2004, could reach \$2 billion. It is not clear how this \$2 billion cost will be funded.

### THE EQUIPMENT SITUATION, 2003

Many of the Canadian Forces major platforms are at or close to the end of their effectiveness. As a consequence, Canada's military equipment is facing massive obsolescence beginning around 2005.

Defence policy is notionally aimed at allocating 23-27 percent of the defence budget to capital acquisition to maintain viable, military core capabilities. This target has not been met over the last three decades; the reality is that the allocation to the capital account has varied from 7-18 percent as a residue of other expenditures. There is, therefore, a huge capital debt or "bow wave" of unfulfilled and deferred projects pushing ahead of an ever-shrinking supply of money. Defence planners in 2003 could find only about 7 percent (or less than \$1 billion) in the defence budget to allocate to the acquisition of new equipment.

Over the next 15 years, 2003-2018, the Canadian Forces needs close to \$50 billion to replace obsolete fleets and to acquire new equipment if it is to sustain and restore core capabilities. Given that the projected availability of capital funds over this period is only some \$20 billion, the Canadian Forces, under current policies, faces an insurmountable \$30 billion shortfall for capital acquisition; that is, a shortfall of \$2 billion a year for the next fifteen years.

### **2003-2008**

The total capital demand for 2003-2008 is \$23.8 billion. The actual capital funding availability for this period is \$8 billion, leaving a re-capitalization shortfall of some \$15 billion, or \$3 billion per year over the next five years.

Over the next five years, seven major platforms – the Hercules CC-130, the Medium Logistics Vehicle Wheeled (MLVW), the Main Battle Tank (MBT), the M-109 howitzer, and the Maritime Helicopter – will have reached (or be close to) obsolescence.

Extending the “life-cycle” of any of these systems beyond 2008, even if it were possible, is plainly too expensive to contemplate because this policy would put significant stress on other parts of the defence budget

If the destroyers or the AORS cannot be maintained, any international deployment of a Canadian naval task group – a major capability called for in *1994 Defence White Paper* – would be problematic without foreign assistance.

### **2008-2013**

Over the period 2008-2013, an additional \$10 billion will be required for capital acquisition.

Two major fleets, the Heavy Logistics Vehicle Wheeled (HLVW) and the Light Support Vehicle Wheeled (LSVW), will reach the end of their effective lives in this period. Three platforms – the CC-150 transport, the Tactical Helicopters, and the Submarines – reach their mid-life refit/life-extension point. Because capital funding will not be sufficient to recover from the capital shortfall of the 2003-2008 period, the government might be forced to choose between correcting the shortfall in either logistics transportation or maritime capabilities. It will be impossible to

capital acquisition is not increased, then the air force will likely disappear through the 2008-2013 time-frame, and either the army or navy will disappear in the same time-frame.

To avert this danger, the Canadian Armed Forces need a controlled and dedicated capital infusion of more than \$2 billion/year for each of the next 15 years to provide the estimated \$50 billion that will be needed to address capital replacements and the transformation of the armed forces. And this increase is, of course, over and above personnel and O&M costs, which can be expected to increase in real terms throughout the period.

By most estimates, if Canada is to sustain the current Canadian Forces set of core capabilities for national command, support, maritime, land, and air force operations while maintaining a Reserve element, then the defence portfolio will require an annual defence allocation of \$18.5 billion (or 1.6 percent of GDP) – an annual increase of \$5 billion in defence expenditures, beginning in 2004.

In *1994 Defence White Paper*, the government warned Canadians

## CHAPTER SIX

becomes less capable. But these two effects are not the central crisis, either. The fact that the next prime minister will not be able to remedy the military crisis and its effects on foreign policy during the tenure of the next government and the difficulty of finding some way to defend Canadians and their interests and to uphold Canada's international responsibilities – these represent the crisis in full array.

Which doors are closed? What could the next prime minister do to avoid this gathering national crisis? The government could stop sending all but token forces overseas, but this would only confirm Canada's impotence. The government might cut some military capabilities to bolster others. However, past policies have nearly eliminated any reserve, and a new round would cut into sparse "core capabilities." One fact is plain: the looming foreign-policy crisis produced by the lack of military capabilities cannot be solved by cutting the few capabilities that remain. Canada, some suggest, could select "niche roles" for the armed forces and reinforce these. But too often the things such advocates usually want to do are not things the world wants done. What, then, should the Canadian Forces be prepared to do? Prudence and experience suggest that the Canadian Forces will be ordered to do over the next ten years the same types of things that it has done in the past ten years – providing small and medium-sized land, sea, and air combat units to use coercive means to help stabilize unruly parts of the world.

The government might try to spend its way out of the crisis. In the early 1950s, it took several years to satisfy the Cold War demand for building from a small base a credible force of some 120,000 people equipped with modern arms, even though the government committed vast resources to this mobilization and increased the defence budget by 135 percent in just a few years. Overcoming today's problem could take a comparative effort, but even that would not resolve the immediate foreign-policy crisis.

Time, not money, is the master of this situation. It takes time – in many cases, years – to change policy goals into military fact: to train leaders, build ships, acquire equipment, and then fashion operational capabilities from the separate pieces. Thus, the next prime minister will have to live with a diminished role in international security affairs, and diplomats will have to manage the consequences.

Constructing future policy on the foundations of the present policy will weaken Canada's national security and defence and disable foreign policy in many important respects. This end will arrive sooner rather than

later if the sinking capability trend is allowed to continue, and it will be increasingly expensive, time-consuming, and difficult to overturn as each month passes. This, then, is the predicted future – national security, defence, and foreign policies essentially disarmed by Canada’s choice, with only faint hope that they can be rescued during the life of the next government.

### WHAT MIGHT BE DONE TO ALTER THIS PREDICTED FUTURE?

An alternative future ought to provide military capabilities adequately structured to meet the current foreseeable objectives with respect to defence, foreign policy, and domestic security. A future policy must provide for the present force and acknowledge the need for sufficient flexibility – mostly in terms of funding – to meet the volatile circumstances of the world-order era. It must concurrently, but separately, address the needs of the future force by confirming and supporting a predictable v



conclusion, but on evidence that Parliament had not heeded well enough the warning of its own Special Joint Committee. The Commissioners, therefore, warned Parliament again: “Civil control of the military may be a defining characteristic of liberal democracies, but it does not occur invariably. Civil control of the military in Canada and abroad should come from attentive citizens acting through an informed, concerned and vigilant Parliament.”<sup>2</sup>

Parliament more recently has become more attentive, as the convening of a Senate committee on national security and defence attests, but this increased attention by itself has not prompted a comprehensive review of national security or defence policy. As the government begins the next round of policy reviews, a major theme within that process ought to be how “a vigilant Parliament” could more effectively oversee security and defence policy, defence management, and operations. The quest is not simply for a passive observer, but for senators and members of parliament to become full and inquisitive partners in decisions aimed at ensuring that Canada is adequately and properly defended.

*Consensus Building.* Federal government ministers, and principally the prime minister in this policy area, have absolute control over defence policy and the direction and control of the Canadian Armed Forces. If they are wise, however, they will acknowledge the expertise of professional officers and the advice offered to them by the chief of the defence staff. Government ministers, moreover, must depend on the chief of the

and the general conditions under which the armed forces will be deployed and employed.

This type of consensus is best developed through direct discussions that provide opportunities for the government to describe its defence goals to the chief of the defence staff. He and his staff can assess the objectives

Determining the true cost of the Canadian Forces is a challenge. The 2002/03 Main Estimates indicate that about 44 percent of the defence budget goes to those who are charged with generating sea, land, and air capabilities. From another perspective, about half of the defence budget is spent on military capability related to operations, and the remainder on various managerial activities. The authors note, for example, that even though the Canadian Forces has been reduced by 50 percent over the last 40 years, overhead (measured as the increase in supervisory groups) has increased in the same time frame by 300 percent. If a significant portion of these managerial funds could be transferred to force generation and operational accounts, then a corresponding portion of the annual \$5 billion shortfall identified in this study might be found from within the current defence budget.

Rather than cutting into core military capabilities, the better alternative is to decide that, henceforth, creating and sustaining these core capabilities effectively and economically at the expense of managerial activities will be at the centre of defence policy. This goal would require a huge redistribution of the resources allocated to national defence and the Canadian Forces, and a reordering of attitudes as well. In a word, policy must be aimed at transformation, a process directed at getting the most core capability from each defence dollar. No one should assume, however, that this process might turn away the gathering crisis, because even in the best of circumstances, it might take many years before this transformation is fully effective.

*Defence-Funding Reform.* Canadian governments typically provide to their own defence policies whatever funds are available after other domestic needs have been addressed. In this alternative future, national defence would be allocated funding that is commensurate with the demands of policy. This objective would require careful assessments of those policy demands before policies are announced. In other words, future white papers on national defence might include two main sections: one to define defence objectives in terms of military capabilities and missions and another to provide, in detail, cost projections indicating how those objectives would be met.

An alternative future would also see defence funds “voted” in two distinct segments. The first would cover personnel and O&M costs with

built-in “threshold funds” to provide for unexpected expenditures during any fiscal year resulting from, for example, unforecasted deployments and support to the provinces. Historically, defence has been able to absorb incremental costs – net of revenues – in the order of 1.25 per cent of annual defence funding. Federal central agencies should anticipate these demands and hold a special and specific defence and security fund to meet them and make arrangements to distribute them without the usual bureaucratic hassle that is common in 2003.

The second distinct segment of defence allocations should go to the capital account. The establishment of individual capital accounts for specific core capabilities would greatly assist in smoothing out annual resource demands. Under this funding mechanism, an ongoing level of investment would be allocated to the capital account. During years where funding requirements are low, funds would accumulate and then be

## THE DEFENCE REVIEW 2003-2004

The fundamentals of Canada's national defence policy are not sound. Military capabilities are eroding quickly from age, use, and obsolescence, among other factors. The effect of this decay, now obvious in the Canadian Forces, will soon become as obvious in foreign policy and may have a serious negative influence on Canada's ability to protect its national sovereignty. Members of the Canadian Armed Forces are on near-continuous duty in dangerous circumstances, and in too many cases they are being asked to "do more with less." Facilities to train replacement personnel are overloaded and under stress, as are the instructors who are double-tasked to instruct new recruits.

The story of the travails of the present Canadian Forces may not be new, but what is increasingly evident is that the future force supposedly intended to replace it may be in even worse condition. The lack of follow-on equipment is serious, but as this study suggests, the disappearance of an entire cohort of younger personnel meant to provide leaders for the future is an even more serious concern. The problems of the present force can, perhaps, be managed for a few more years through emergency funding, the use of reserve forces, expensive maintenance on "clapped-out, operational junk", and the skill and dedication of members of the Canadian Forces.

The future force, however, cannot be plucked out of thin air and thinner budgets. Even if the government were to grasp the problem and provide unlimited funds, it may not be possible to save some capabilities, simply because new equipment is not immediately available. In every case, time will be needed to acquire military assets, to recruit and train new people, and to weld these two elements into usable military capabilities. In the meantime, the government will have to find ways to manage its national security, defence, and foreign policies with few credible military means.

A review of national defence policy, promised by every national political party, is clearly in the offing. If experience is a true guide, then a new review might soon take off in many directions and become scattered among numerous defence issues. This harmful habit can be averted only if the next prime minister takes control of the process himself (as Pierre Trudeau did during the 1968-70 review) and points it in a specific direction.

The researchers and authors of this study recommend that those conducting the defence policy review, no matter from where they may be assembled, be given a very specific set of tasks. The review committee (one assumes a committee) must first illustrate for the government and the public the very serious nature of the future force crisis – expanding, perhaps, on this research with the advantages the committee will have in staff and access to classified information from government sources. Second, the committee must deliver to the government conclusions concerning the life expectancy of core capabilities and major elements within these capabilities. This section of the committee’s report must include recommendations on how the government might rectify or forestall the



# *Historical Annex*



<i>Era</i>	<i>Geo-Political Context</i>	<i>Policy Direction</i>	<i>Statistics</i>	<i>Remarks</i>
<b>1930s</b>	<ul style="list-style-type: none"> <li>• Pact of Paris, 1928</li> <li>• League of Nations</li> <li>• Economic Depression</li> <li>• Militant nationalism: Germany, Italy, Japan</li> </ul>	<ul style="list-style-type: none"> <li>• Canada signed the Paris Pact of 1928, which described “a war” as “an aggression”, as “an international crime”, and limited settlement of all disputes, of whatever nature, to “pacific means.”</li> <li>• Canada disarmed because war had been declared illegal.</li> </ul>	<p><b>1939 (Personnel)</b></p> <p>Navy: 1,769                      Army: 4,492                      Air Force: 2,948                      Totals: 9,209</p>	<ul style="list-style-type: none"> <li>• Unilateral military action by Nazi Germany and Fascist Italy and ineffectiveness of Paris Pact led to general war in Europe.</li> <li>• Canada was poorly prepared for WWII. Its largest contribution was light infantry, the easiest type of force to generate.</li> </ul>
<b>WWII 1939-1945</b>	<ul style="list-style-type: none"> <li>• Allies versus Axis powers</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring peace through collective action.</li> </ul>	<p><b>Serving in WWII (Personnel)</b></p> <p>Navy: 106,522                      Army: 730,625                      AF: 249,624                      Totals: 1,086,771</p>	<ul style="list-style-type: none"> <li>• Total cost of war estimated at (1947 dollars) 20.25 billion, approx. 45% of GDP.</li> <li>• Deferring military intervention from 1936 to 1939 resulted in the need for a massive war effort.</li> </ul>
<b>1946-1947</b>	Allies win WWII <ul style="list-style-type: none"> <li>• Demobilization and reintegration of service members to civilian community without creating a recession</li> <li>• Nuclear weapons</li> <li>• Berlin Airlift</li> <li>• United Nations as an institution to prevent aggression leading to general war</li> </ul>	Canada's Defence 1947 <ul style="list-style-type: none"> <li>• Like a White Paper (Claxton, MND)</li> <li>• Reduce defence expenditures</li> <li>• Reduce three service departments under three ministers to one – MND</li> <li>• Integration of Services headquarters</li> <li>• Reorganization of Commands</li> <li>• Three roles for armed services:                             <ol style="list-style-type: none"> <li>1. Defence of Canada</li> <li>2. Assist civil power</li> <li>3. Voluntary collective action with allies or under UN</li> </ol> </li> </ul>	<p><b>1947 (Personnel)</b></p> <p>Navy: 6,821                      Army: 13,985                      AF: 11,804                      Totals: 32,610</p>	<ul style="list-style-type: none"> <li>• Most Canadians were convinced that WWII was a result of pre-war laissez-faire.</li> <li>• Most Canadian politicians were committed to taking a prominent role in international affairs.</li> <li>• 1947 defence budget \$240 million, about 15% of National Budget.</li> </ul>





- 1984-1993 (Mulroney)**
- U.S. regarded Cold War as an economic war.
  - President Reagan enhanced conventional force spending.
  - Canada had closer relationship to U.S.
  - Canadian debt required \$44 billion annual
- Conservative government pledged increase in defence expenditure and commitment to collective defence.
  - 1986 Department of External Affairs paper stressed:
    - Canada's welfare depended on the international political, economic, and strategic situation. Therefore, active
- (Personnel)**
- |              |        |  |  |  |  |
|--------------|--------|--|--|--|--|
| <b>1984:</b> | 82,046 |  |  |  |  |
| <b>1989:</b> | 86,863 |  |  |  |  |
| <b>1993:</b> | 75,629 |  |  |  |  |
- Expenditures on defence were 2.1% of GDP.
- Faced with a large federal deficit and continuing public demand for social services, the Mulroney government was unable to increase defence spending significantly.
  - The inherited commitment-capability gap re-emerged.

<i>Era</i>	<i>Geo-Political Context</i>	<i>Policy Direction</i>	<i>Statistics</i>	<i>Remarks</i>
<b>1993-2004</b> (Chrétien)	<ul style="list-style-type: none"> <li>• Reunification of East and West Germany.</li> </ul>	<ul style="list-style-type: none"> <li>• An effective, realistic, and affordable policy: The 1994 White Paper</li> </ul>	<b>(Personnel)</b> <b>1994:</b> 72,363	Chrétien government effectively repeated the earlier Liberal

**Table A.1**

