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EXERCISE/EXERCICE NEW HORIZONS

**EMBRACING THE UNCERTAINTY PRINCIPLE: THE PATH
TO A RELEVANT FORCE STRUCTURE FOR THE
CANADIAN FORCES**

By LCdr Derek Buxton

29 April 2005

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EXERCISE NEW HORIZONS

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ABSTRACT

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- Francis Bacon, 1561–1626¹

This paper is not an in-depth critique of current long-term defence planning processes within the Canadian Forces (CF). Rather, the purpose is to add to the existing body of knowledge and debate concerning the imperatives of up-front strategic-thought, fully integrated capability planning, and, streamlined requirements and procurement processes. To meet these imperatives, and to enable the CF to respond to the uncertainty of the current global security environment, an *ℓ* model is presented. Adaptive planning is a holistic methodology for delivering Defence services that emphasizes top-down strategic rigour and detailed scenario development to define the roles and concept of employment for the CF. This vision and strategic direction is a necessary precursor to focusing program delivery, shortening procurement timelines and reducing the level of nugatory effort in requirements and project management activities. The institutionalization of a capabilities-based planning mind-set across the Department is the essential foundation of adaptive long-term defence planning. This new approach will lead to the development of modular capabilities that are defined by the joint effects they deliver. In doing so, adaptive planning will enable the CF to become a relevant policy tool of Government.

¹ Oxford Reference, , ed. Elizabeth Knowles (Oxford: Oxford University Press, 2003) [document on-line]; available from <http://www.oxfordreference.com>; Internet; accessed 16 March 2005.

EXERCISE NEW HORIZONS

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Introduction

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- Stephen Hawking²

In the study of classical physics the behaviour of a particle is precisely predicted through the use of scientific laws and mathematical formulae. The uncertainty principle³, a concept borrowed herein from the field of quantum physics, argues that the position and momentum of a particle cannot in fact be precisely calculated but rather only predicted with a certain degree of probability. As a result, "... particles can appear in places where they have no right to be ...", from a classical standpoint.⁴ Accepting that the dynamism of the world today approximates the quantum mechanical world, it is thus the notion of predictability and probable outcomes with which long-term defence planners must come to grips. That is, how do the decisions rendered today affect long-term force structures and the ability of future governments to respond to contemporary issues at home and abroad? Answering this question is the quintessential challenge for the long-term defence planner.

In the Cold War era a standard view of the world was possible with defence structures based on identifiable threats and easily conceived conflict scenarios. This future

² Oxford Reference, , ed. Elizabeth Knowles (Oxford: Oxford University Press, 2003) [document on-line]; available from <http://www.oxfordreference.com>; Internet; accessed 16 March 2005.

³ In the realm of quantum physics, the Heisenberg uncertainty principle refers to "... a limitation on accuracy of simultaneous measurement of observables such as the position and the momentum of a particle". For a more detailed explanation see Wikipedia: The Free Encyclopedia, "The Heisenberg Uncertainty Principle," <http://en.wikipedia.org>; Internet; accessed 16 March 2005.

⁴ University of Oregon: The Electronic Universe, "The Heisenberg Uncertainty Principle," <http://zebu.uoregon.edu>; Internet; accessed 17 March 2005.

was a set piece engagement of high intensity conventional warfare, with NATO facing off against the Warsaw Pact on the plains of Europe. This known scenario allowed militaries to clearly articulate threats and anticipate enemy capabilities. As such the use of incremental, threat-based planning methodologies was general practice. With the fall of the Berlin wall and the demise of the Soviet Union, the balance of power maintained by a bi-polar world was upset.⁵ Regional tensions and intra-state conflict came to the fore and military operations other than war, beyond the traditional United Nations Chapter VI peacekeeping mission, began to flesh-out the spectrum of conflict.⁶ The US hyper-puissance⁷ emerged, taking leadership roles in UN and NATO missions into failed states such as Somalia and the former Yugoslavia.

Today, we find ourselves faced with the extremism of non-state actors such as Al Q'uida, who ushered-in a new era when the reach of global terrorism so profoundly assumed centre stage on September 11th, 2001. Add to this mix the growing concern of rogue states coupled with the threats of asymmetrical methodologies, weapons of mass destruction and the proliferation of missile technologies. These issues, when considered alongside the ever-present problem of failed or failing states and the inevitability of future humanitarian disasters, make it an understatement to characterize the world as "... complex and often dangerous ..."⁸. In a nutshell, the world today is simply too complicated and

⁵ Denis Stairs, /
Foreign Affairs Institute, 2003), vii.

(Calgary, Alta.: Canadian Defence &

⁶ From a Canadian doctrinal perspective, military operations and the spectrum of Conflict are defined in Department of National Defence, /
Headquarters, 2000), 1-3 to 1-5.

(Ottawa: National Defence

⁷ The term hyperpuissance (or hyperpower) was coined by outspoken French Foreign Minister Hubert Vedrine in 1997, to define what he saw as the political, military, economic, and even cultural domination of the U.S. in the post-Cold War world. For a more detailed examination of this opinion see John Rossant, "Europe's Big Test," /
, February 5, 2001[magazine on-line]; available from <http://www.businessweek.com>; Internet; accessed 18 March 2005.

⁸ Privy Council Office, -
vii.

(Ottawa: Privy Council Office, 2004),

unpredictable for old school military planning to provide a viable outcome. In the words of Doctor Eric Ouellet: “Nothing can be taken for granted, nothing is business as usual.”⁹

In light of these security challenges it is currently in vogue to be talking about transformation. This trend is prolific, from the United States, to Russia, NATO and even in Canada. But what does transformation really mean and how should the Canadian Forces (CF) respond to the strategic reality of uncertainty? The CF must adopt an adaptive planning methodology that constantly reassesses prevailing strategic priorities and drives the development of relevant military capabilities. Such a process must be robust and enduring to ensure the CF remains relevant and useful as a contemporary tool for the Government. Heavily invested in strategic rigour, adaptive long-term defence planning provides a shared vision with government and a consistency of approach that cuts across service boundaries. It will allow the CF to optimize scarce resources and fully exploit the synergies of joint operations to deal with emerging threats in a constantly changing and uncertain global context.

This paper will begin with an examination of the nature of Defence policy-making in Canada. In contrast to past practices, the importance of strategic-level thinking and top-down driven policy-making will be addressed. After developing a working definition of a relevant capability, traditional long-term defence planning methods, as the means of delivering capabilities, will be discussed. Recognizing that the slow, cumbersome and resource-intensive old-school military planning techniques do not suffice in an era of uncertainty, the new methodology of *Adaptive Planning* will be presented as a viable alternative. This model will then be discussed in detail to demonstrate how the issue of global uncertainty, along with the ever-present constraint of fiscal conservatism, can be overcome.

⁹ Eric Ouellet, “Low-Intensity Conflicts and Military Leadership: The Canadian Experience,”
*, Vol. 10, No. 3 (Autumn 2003): 77.

Canadian Defence Policy

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- Strategy 2020¹⁰

The Defence mission articulated in Strategy 2020 is simple and timeless; in fact it has seemingly been the cornerstone, in some form or another, of every major policy statement since 1950.¹¹ A tendency towards default high-level strategic guidance naturally leads the observer to conclude that defence policy-making is a bottom-up effort. Bland and Maloney suggest that:

“... defence policy is a set of interrelated decisions taken by political, military, and public service actors concerning the selection of defence-related goals and the means of achieving them and that they take these decisions within a formal and informal (but regularized) decision-making process.”¹²

As such, defence policy-making can be characterized as collaborative in nature with defence policy effectively being a perpetual work in progress.

The 1994 White Paper “... calls for multi-purpose, combat-capable armed forces able to meet the challenges to Canada's security both at home and abroad.”¹³ This concept is too broad to provide a rational starting point for uncertainty-sensitive¹⁴ defence planning.

¹⁰ Department of National Defence, -
Department of National Defence, 1999), 2.

(Ottawa:

¹¹ Notwithstanding the April 2005 Defence Policy Statement, since 1950 there have been only 4 Defence White Papers (1964, 1971, 1987 and 1994) all of which have been relatively consistent in espousing three strategic thrusts, namely; to defend Canada, to defend North America, and to participate in collective arrangements in support of international peace and security. Major J.C. Stone, “Canadian Defence Policy” (lecture, Canadian Forces College, Toronto, ON, October 4, 2004).

¹² Douglas L. Bland and Sean M. Maloney, “Finding a Defence Policy: The Never-Ending Dynamic,” in
* (Montreal & Kingston: McGill-Queen’s University Press, 2004), 33.

¹³ Department of National Defence, > (Ottawa: Canada Communications Group, 1994) [document on-line]; available from http://www.forces.gc.ca/admpol/eng/doc/5112_e.htm; Internet; accessed 16 March 2005.

¹⁴ As defined by Paul K. Davis, uncertainty-sensitive planning requires “... learning to plan in a way that includes the expectation of surprises and the need for adaptations.” For a complete discussion on uncertainty-

The notion of multi-purpose forces is a guise to the risk-adverse and incremental decision-making processes in the Department of National Defence (DND).¹⁵ This situation is compounded by a culture within DND that focuses on short-term issues, a tendency that has impacted the level of rigour applied to strategic thinking and long-term planning.¹⁶ For a nation with ambiguous interests and values¹⁷, where in the world is the next flashpoint that the CF might be deployed? The practice of political flavourism does not provide a sound basis upon which to make defence plans. Further, it is this incremental approach that has led to the seeming duplicitous situation in the 1990s of realising the so-called peace dividend, through budget cut-backs and force reductions, while continuing to mount overseas missions at an ever increasing tempo. At the end of the last decade “... the CF had almost as many people in Europe as it had when the Cold War ended.”¹⁸ The lack of coherence between purported strategic thrusts and actual day-to-day management of the CF serves only to complicate the role of the long-term defence planner.

As Admiral Jeffrey Brock stated in 1961, “the nature of the forces possessed should outwardly reflect and emphasize the nature of a countries external policies.”¹⁹ This is the bottom-line, a requirement to define our level of national ambition on the world stage. This is ideally a venture at the grand-strategic level and requires greater convergence of thought between senior military and political leaders. “Soldiers and politicians share responsibility

sensitive planning see Paul K. Davis, “Uncertainty-Sensitive Planning,” in _____, ed. Stuart Johnson, Martin Libicki and Gregory F. Treverton, (Santa Monica: RAND, 2003), 131-155.

¹⁵ Bland, “Finding a Defence Policy...”, 49.

¹⁶ Lieutenant-General K.R. Pennie, “Strategic Thinking in Defence,” _____, Vol. 2, No. 3 (Autumn 2001): 21.

¹⁷ For an insightful discussion concerning the lack of coherence in Canadian foreign policy see Derek H. Burney, “Foreign Policy: More Coherence, Less Pretence,” _____ (Ottawa: Centre for Trade Policy and Law, 2005).

¹⁸ Peter Gizewski, “Canada’s Defence Policy: Is Change Really Needed?” (Toronto: Royal Canadian Military Institute, 2005), 2.

¹⁹ Royal Canadian Navy, _____ (Ottawa: RCN, 1961), 9.

for the defence of Canada. But they cannot do so effectively unless they are strongly linked by common understandings, shared goals and appropriate knowledge.”²⁰ However, in the absence of specific guidance and priorities from government, and accepting the collaborative and evolutionary nature of defence policy-making in Canada, then key assumptions, validated through applied strategic rigour within the Department, must be made and presented as the basis for future long-term defence planning. As Colonel Jaeger suggests: “The highest level of the Department must be prepared to address this ambiguity.”²¹ Clear policy guidance and priorities are essential precursors to doctrine that matches military capabilities to political goals.²²

Uncertain Futures and the Ball of Snakes

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- Robert Frost, 1874–1963²³

The incremental threat-based construct of the Cold War made sense to governments and militaries alike. With a focus on collective defence, membership in NATO simplified decision-making. Today, however, the uncertainty principle dictates that defence planners can no longer rely upon predictable futures to base force structure decisions. Referring to the demise of the - and the current unpredictable nature of the threat emanating from failed or failing states, General Hillier has stated that: “... we've got to shape ourselves

²⁰ Douglas L. Bland, “Parliament’s Duty to Defend Canada,” * , Vol. 1, No. 4 (Winter 2000): 43.

²¹ Colonel H. F. Jaeger, “Getting what we need: confronting structural speed bumps on the road to improved defence capability” (Toronto: Canadian Forces College National Security Studies Course Paper, 2003), 15.

²² Dan Middlemiss, “A Military in Support of Canadian Foreign Policy: Some Fundamental Considerations,” (Halifax: Centre for Foreign Policy Studies, 2003), 17.

²³ Oxford Reference, , ed. Elizabeth Knowles (Oxford: Oxford University Press, 2003) [document on-line]; available from <http://www.oxfordreference.com>; Internet; accessed 18 March 2005.

against that ball of snakes. To do that, the Canadian Forces have to be relevant...”.²⁴

Without a precisely predictable future, incremental threat-based planning can no longer be leveraged to produce viable outcomes. Alongside this high degree of global uncertainty the so-called revolution in military affairs²⁵, the effects of rapid technological advances, doctrinal innovation and organizational change, further complicates the role of the contemporary defence planner.

As evidenced by the push for Defence transformation there is clearly a recognized need to fundamentally alter the business of defence in Canada. Such a transformation, however, does not necessarily equate to starting anew with a blank sheet of paper. The fiscal reality in Canada dictates the imperative to lean more towards transformation through adaptation. That is, blending existing capabilities with new capabilities that are then employed in missions to cater for emerging threats and situations in ways that perhaps were not conceived-of before. Defence transformation is defined as re-orientation in response to a changing security environment in order to ensure the continued relevance and effectiveness of a nation’s military.²⁶ There is no doubt that militaries will need to remain adaptive in order to provide their government with relevant options. Against the backdrop of a future context that is so uncertain, transformation perhaps does not have an end-state but rather is merely the contemporary moniker for what should be considered an ongoing evolution. Defence planners must therefore “... seek to develop new capabilities to meet

²⁴ As quoted by Graham Fraser, “Forget The Bear – now, it’s snakes,” *The Star*, 19 March 2005 [article online]; available from <http://www.thestar.com>; Internet; accessed 21 March 2005.

²⁵ For a thorough discussion on the revolution in military affairs see Elinor C. Sloan, *Revolution in Military Affairs* (Montreal: McGill-Queen's University Press, 2002).

²⁶ The Author has paraphrased the definition adopted by DND as quoted by Lieutenant-General K.R. Pennie, “Transforming Canada’s Air Force: Vectors for the Future,” *Journal of Air Force History*, Vol. 5, No. 4 (Winter 2004): 40.

tomorrow's threats as well as those of today."²⁷ Naturally then, the starting point is strategic assessment and global domain awareness.

The key to remaining adaptive to uncertain futures necessitates the adoption of a more rigorous strategic mindset. The notion put forth here is a simple one; the factors that drive and define the environment in which modern militaries will be called upon to operate must be anticipated and clearly understood in order for those militaries to operate effectively. As Lieutenant-General Pennie opines, the successful completion of the Canadian defence mission "... depends upon good strategic assessments derived from sound strategic thought."²⁸ In this regard strategic thinking and long-term defence planning provide the means towards achieving the goals of the Government of Canada.²⁹

Unfortunately, as discussed earlier, inculcating a strategic mindset at the political-military level has traditionally been a challenge. As the products of committees and tiger-teams, much of the strategy documentation across DND today is the output of bottom-up driven process. As highlighted in the January 2004 US Department of Defense @

* , such a process "... frequently results in a signature ready document ..." but "... does not support early senior leadership involvement to shape strategic guidance up-front."³⁰ In a less clearly defined global environment, strategic top-down driven guidance is imperative. As Major-General (retired) Terry Liston advocates, "... the main thrust of force development efforts must be guided by a new vision of the real-world threat and Canada's

²⁷ United States Department of Defense, Government Printing Office, October 2004), 2.

(Washington, D.C.: U.S.

²⁸ Pennie, "Strategic Thinking in Defence", 21.

²⁹ Pennie, "Strategic Thinking in Defence", 22.

³⁰ United States Department of Defense, @

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℘ (Washington, D.C.: U.S. Government Printing Office, January 2004), 2-3.

response.”³¹ Just as in scientific endeavour, the exacting nature of defence planning can only be extended to limit for which certainty is assured. Constant re-assessment of the strategic context and careful appraisal of contemporary experience is a key for delivering relevant military options to government.

Relevant Capabilities Needed

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- Donald H. Rumsfeld³²

Defined in a Canadian context, a military capability “... is generated when plans, people and equipment are combined to achieve government goals.”³³ This definition hints at the various functional elements that are drawn together, but belies the complex task of defining, validating, procuring and deploying a military capability. The CF recognises that “...capabilities are the product of a number of functional components each of which are in turn affected by the environment in which they will be employed operationally.”³⁴ To assist with managing this complexity, the Canadian Joint Task List (CJTL) tool was developed.³⁵ The CJTL provides a baseline describing the range of tasks that a modern military might need to undertake to achieve Government policy goals. Generic in nature, the CJTL does not list all the capabilities currently in the CF inventory nor does it offer any guidance as to their completeness, robustness or relevance of those held. It does however provide a well-

³¹ Major-General (retired) Terry Liston, “Counter-Insurgency and the Structure of Canada’s Army,” *Journal of Military and Strategic Studies*, Vol. 9, No. 4 (Winter 2004): 19.

³² United States Department of Defense, “The 30th Anniversary of the Department of Defense (Washington, D.C.: U.S. Government Printing Office, April 2003), 1.

³³ Department of National Defence, “Capability-Based Planning Overview,” <http://www.vcds.forces.gc.ca>; Internet; accessed 14 October 2004.

³⁴ Department of National Defence, * (Ottawa, Vice Chief of the Defence Staff, 2002), 24.

³⁵ Department of National Defence, “Canadian Joint Task List Version 1.4,” <http://www.vcds.forces.gc.ca>; Internet; accessed 18 March 2005.

developed framework and a common lexicon of terminology that enables long-term defence planners across DND to frame their efforts in terms of capabilities.

As an adjective, relevant is defined as being “closely connected or appropriate to the matter in hand.”³⁶ As such, a relevant capability can be construed as an assembly of the necessary functional elements³⁷ required for attaining a contemporary, or emerging, government goal. In light of the uncertainty principle and the natural propensity towards political flavourism, then this would seem a laudable, albeit idealistic, goal. Having a diverse force structure, to cover-off every imaginable contingency or political whim, is simply not possible given the reality of fiscal conservatism. To address this issue “... one quickly discovers the importance of modularity ... the capacity to take a bit of this and a bit of that, and to do something for which one had not previously planned explicitly.”³⁸ It is a modular approach that will enable the CF to move forward by combining existing capabilities with new ones in order to adapt to emerging priorities.

Long Term Defence Planning

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- Omar Nelson Bradley, 1893-1981³⁹

If strategy is the starting point and relevant capabilities the destination, then long-term defence planning is the bridge between them. Methodologies might include: incremental planning, the practice of evolving current capabilities to meet prevailing

³⁶ Oxford Reference, , ed. Catherine Soanes and Angus Stevenson (Oxford: Oxford University Press, 2004) [document on-line]; available from <http://www.oxfordreference.com>; Internet; accessed 18 March 2005.

³⁷ In Canada the acronym PRICIE: **P**ersonnel, **R**esearch & development/operational research, **I**nfrastructure & organization, **C**oncepts, doctrine & collective training, **I**nformation technology infrastructure, and **E**quipment, supplies & services, is utilised to define the various function elements of a military capability. For a more detailed description see DND, * 24-27.

³⁸ Davis, “Uncertainty-Sensitive Planning”, 143.

³⁹ About, Inc. “Famous Military Quotations,” <http://quotations.about.com>; Internet; accessed 05 April 2005.

conditions; threat-based planning, or acquiring capabilities based upon defeating an identified enemy; top-down planning, linking national strategy to the roles and tasks of force elements; capability-based planning, which entails defining the necessary capability inventory and then procuring that inventory in the most cost-effective manner; and, scenario-based planning, which involves utilizing a set of hypothetical situations to assess which capabilities provide the ability to achieve mission objectives.⁴⁰ Although there are many different methodologies and approaches to long-term defence planning the one distinguishing feature today is the “... degree to which uncertainty pervades the process.”⁴¹ Given this uncertainty, is there a rational process that can be adopted to enable the translation of dynamic strategic imperatives into relevant military capabilities? As discussed above, finding this rational process “...is complicated by the nature of Canadian governments, the politics of national defence, civil-military relations, national myths and perceptions, and the complexity of defence planning in conditions of uncertainty.”⁴² To overcome the current practice of giving little attention to the notion of uncertainty a disciplined approach is essential. “Conscious methodology can help provide some of that discipline.”⁴³

In their book, *War and Civilization*, Eliot Cohen and John Gooch analyse a number of occasions where competent militaries have failed in conflict. They explain the three basic reasons that militaries falter are a failure to learn, anticipate or adapt.⁴⁴ In particular, the need “... to adapt to unexpected circumstances tests both organization and system, revealing

⁴⁰ For a concise description of nine long-term defence planning methods see Plausible Futures Newsletter, “The Use of Scenarios in Long Term Defence Planning,” <http://plausible.custompublish.com/cparticle55074-6691a.html>; Internet; accessed 11 March 2005.

⁴¹ Plausible Futures Newsletter, “The Use of Scenarios in Long Term Defence Planning,” <http://plausible.custompublish.com/cparticle55074-6691a.html>; Internet; accessed 11 March 2005.

⁴² Bland, “Finding a Defence Policy...”, 40.

⁴³ Davis, “Uncertainty-Sensitive Planning”, 132.

⁴⁴ Eliot A. Cohen, *War and Civilization* (New York: Free Press, 1990), 25-26.

weaknesses that are partly structural and partly functional...”⁴⁵. For planning to be adaptive it means that the planning process must be able to produce capabilities that are suitable for a new use or purpose, or a force structure that can adjust to account for new conditions.⁴⁶ In describing the experiences of the Canadian Army in Korea, Brent Watson describes a number of significant deficiencies with training, doctrine, equipment and supplies. These shortfalls, key functional elements of capability⁴⁷, resulted in an inability to adapt from a World War II combined arms style of warfare to small unit hit-and-run patrol actions.⁴⁸ This, he posits, “... was a measure of the distance between defence planners in Ottawa and the troops in the firing line.”⁴⁹ To reduce this distance an adaptive planning model is proposed. Such a methodology seeks to align defence planning efforts with the realities in which the CF may be called-upon to act.

Adaptive Planning – A New Paradigm

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- Nicolo Machiavelli, 1469-1527⁵⁰

Realizing a long-term defence plan involves the four rudimentary stages of crafting strategy, planning, resource allocation and execution.⁵¹ This process is depicted below in figure 1. Despite the plethora of long-term defence planning methodologies available to

⁴⁵ Cohen, _____, 162.

⁴⁶ The verb "adapt" is defined as "to make suitable for a purpose" or "to become adjusted to new conditions", see Oxford Reference, _____, ed. Catherine Soanes and Angus Stevenson (Oxford: Oxford University Press, 2004) [document on-line]; available from <http://www.oxfordreference.com>; Internet; accessed 14 March 2005.

⁴⁷ Correlates with elements of the PRICIE model described above.

⁴⁸ Brent Byron Watson, _____ / _____ (Montreal: McGill-Queen's University Press, 2002), 177.

⁴⁹ Ibid., 177.

⁵⁰ Camden New Jersey Website, http://www.camdennewjersey.org/project_management.htm; Internet; accessed 02 March 05.

⁵¹ This is the generic process as outlined in US DoD, @ _____, ..., 2-2.

planners, the reality is that most approaches involve a mixture of several different tools to achieve the four stages. This construct is not being challenged herein, however, it is argued that the emphasis placed on each of the rudimentary stages must be adjusted. The challenge is to adopt the right blend of methodologies with the necessary emphasis on strategic rigour,

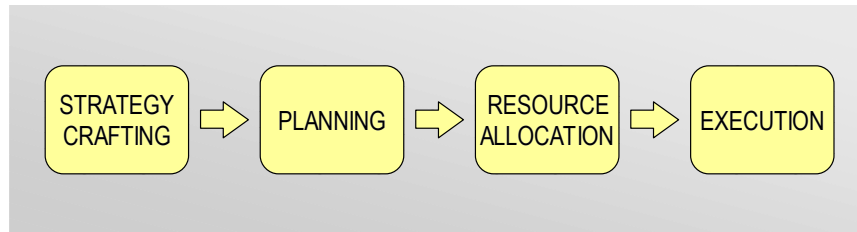


Figure 1 - The Four Rudimentary Stages of Long-Term Defence Planning

such that an appropriate and enduring long-term defence planning process is instituted. With an emphasis on top-down strategic guidance, the adaptive planning model aims to overcome the uncertainty challenge by using scenario-led planning to drive the development of relevant capabilities. This will provide commanders with a robust selection of capability modules for delivering the necessary effects in a theatre of operations.

The proposed model for adaptive planning shown in figure 2 is based loosely upon the definition presented by the American Marketing Association. In essence, adaptive planning is a cyclical process that provides the basis for integrating multiple sources of information and analyses into actionable strategic decisions.⁵² There are four phases⁵³ to the adaptive planning model proposed herein.

The first phase is a - that examines both the internal and external environmental factors affecting the nature of defence for Canada. As discussed heretofore,

⁵² American Marketing Association, "Dictionary of Marketing Terms," <http://www.marketingpower.com>; Internet; accessed 11 March 2005.

⁵³ It is important to draw a distinction between the four generic steps of long-term defence planning (figure 1) and the four phases of the proposed adaptive planning model (figure 2). Although there is a degree of correlation, the translation of the generic steps of long-term defence planning (an illustrative process) to the phases of adaptive planning (the prescriptive model) is not intended to be precise.

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employed. Strategic level thinking is essential at this stage to ensure that the scenarios have high-level buy-in and the possible uses for the CF are well understood by those positioned to influence how the CF is in fact employed. This will reduce the negative effects of political flavourism and provide greater fidelity between the mandates provided by the political-military decision-makers and the lower level planning effort essential to equip, train and prepare CF formations for these operations.

Consulting the Crystal Ball

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- Sir Julian Corbett, 1854-1922⁵⁴

The second phase of the adaptive planning process results in a compendium of 4 . The best way to test for relevance and provide validation of a current or proposed capability is through scenario use and analysis. In this context scenario use and analysis refers to the process of creating, reviewing and updating the compendium of approved CF Force Planning Scenarios, and using these scenarios to test force structures. By using robust and challenging scenarios to test current and proposed force structures, the types of lessons articulated by Cohen and Gooch in can be addressed in a benign experimental, simulated or training environment. This will provide the CF the wherewithal to learn, anticipate and adapt to uncertain futures before they learn the hard lessons on the firing line. “Wars are unforgiving if adaptations ultimately prove themselves inadequate or misguided.”⁵⁵ As such scenario analysis is a vital component of the strategic rigour required in modern defence policy-making.

⁵⁴ Sir Julian S. Corbett, 4

(New York: Dover Publications, 2004), 15.

⁵⁵ Russell W. Glenn, A

(Santa Monica: RAND, 2000), 38.

“A good scenario planning process blends solid research with organizational wisdom and creativity.”⁵⁶ It is not a panacea but just one component integral to adaptive planning, since “to make a difference, the scenario planning process also needs a strategy development phase to dissect future worlds and synthesize the findings ...”⁵⁷. This must flow from the work performed in phase one, with strategic assessment efforts viewed as an iterative sub-process that is central to the decision-making framework. The CF has adopted eleven basic scenarios to cover the spectrum of conflict and describe potential CF operations.⁵⁸ Rightly characterized as a work in progress, the CF Forces Planning Scenario framework is also presented as a tool or an aid to long-term defence planners. This mindset is illustrated by the caveat that the scenarios “... are a tool for strategic planning purposes only; as such, they do not reflect a Canadian position on the likelihood of any or all of these situations arising, or on the future employment of the CF.”⁵⁹ Thus, the importance of scenario analysis as a central guiding principle of modern defence policy-making is undermined. This prevailing attitude is a symptom of bottom-up planning and will clearly hamper the ability to link strategy to capability.

The NATO best practice model for long-term defence planning emphasizes a scenario-led approach.⁶⁰ Contemporary thought from RAND indicates that nations should “... discard the traditional focus on one or a few sharply defined scenarios in favor [sic] of a many-scenario approach ... that puts a premium on assuring future strategic and operational

⁵⁶ Janus Global Consulting Inc, “Successful Scenario Planning,” <http://www.janus.org>; Internet; accessed 18 March 2005.

⁵⁷ Ibid.

⁵⁸ Department of National Defence, “Descriptions - Force Planning Scenarios,” http://www.vcds.forces.gc.ca/dgsp/pubs/rep-pub/dda/scen/intro_e.asp; Internet; accessed 18 March 2005.

⁵⁹ Department of National Defence, “Concept Paper - Force Planning Scenarios (FPS),” http://www.vcds.forces.gc.ca/dgsp/pubs/rep-pub/dda/scen_e.asp; Internet; accessed 18 March 2005.

⁶⁰ Colonel Peter Faber, “NATO Long-Term Defense Planning: Implications for the Future” (Rome: NATO Defence College Academic Research Branch Paper, 2003), 10.

adaptiveness.”⁶¹ With failed and fragile states such a prominent feature of the new Foreign Policy Review⁶², then the current situation, where only one variant of a generic peace enforcement scenario⁶³ addresses failed states, must clearly be rectified. Of course, adopting a process that employs multiple variants of multiple scenario sets would be very time consuming and resource-intensive. This, however, cannot be used as justification for failing to adequately resource a vital activity.

Why Capability Based Planning?

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- Hesiod, 8th century B.C.⁶⁴

The third phase of the proposed adaptive planning model is *4*. That is, the decision-making that matches the selection of capability options with the allocation of resources. Any enduring long-term defence planning process must recognise the need to optimize cost. A capabilities-based planning (CPB) process is designed for “...planning, under uncertainty, to provide capabilities suitable for a wide range of modern-day challenges and circumstances while operating within an economic framework that necessitates choice.”⁶⁵ CBP strives to answer two fundamental questions: What do we need, and, how do we get there from today?⁶⁶ In answering these questions, CBP is

⁶¹ Paul Davis,

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(Santa Monica: RAND, 1994), 4.

⁶² Department of Foreign Affairs, *6* (Ottawa: Government of Canada, 2005).

(Ottawa: Government of Canada,

⁶³ The failed state variant of the Peace Support Operation, Scenario 9(a), is described at Department of National Defence, “Descriptions - Force Planning Scenarios,” http://www.vcds.forces.gc.ca/dgsp/pubs/rep-pub/dda/scen/intro_e.asp; Internet; accessed 18 March 2005.

⁶⁴ Camden New Jersey Website, http://www.camdennewjersey.org/project_management.htm; Internet; accessed 02 March 05.

⁶⁵ Paul K. Davis, *6*

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(Santa Monica: RAND, 2002), xi.

⁶⁶ The Technical Cooperation Program, TTCP, 2004), 2.

(Alexandria, VA:

inherently adaptive in nature, and becomes an essential ingredient to the adaptive planning paradigm.

The lack of resources dedicated to scenario-based planning is generally consistent with the overall lack of emphasis placed on the strategy crafting and planning stages of long-term defence planning. In the US it is suggested that up to sixty percent of the overall long-term defence planning effort is devoted to the resource allocation stage, whereas combined, the strategy crafting and planning stages account for merely twenty percent.⁶⁷ A similar phenomenon exists in the CF, where the "... missing strategic direction appears to be some elements of capabilities must be developed and most of the " of any given capability should be developed."⁶⁸ As projects churn through the requirements and procurement process⁶⁹, many projects are being juggled, most of which will never come to fruition, ultimately leading to inefficient use of scarce resources, cynicism and poor morale.⁷⁰ There is no doubt that "... definitive front-end strategy and planning guidance would ... drive a more streamlined and less labour-intensive resourcing [sic] process..."⁷¹.

As a central element of the adaptive planning model, CBP redresses the imbalance of effort issue through a disciplined approach that emphasizes strategic direction. This, in turn, will permit better use of scarce human resources for the 4 phase of the adaptive planning model. By reducing the nugatory effort associated with poorly defined commitments that lack strategic-level buy-in, program development timelines are reduced,

⁶⁷ As interpolated by the Author from the figure at US DoD, @ ..., 2-2.

⁶⁸ Jaeger, "Getting what we need...", 14.

⁶⁹ A generic term chosen to represent an involved and complex set of processes and approvals collectively known as Defence Planning & Management and Project Approval Guidance, which superseded the Defence Management System (DMS) in 2004. Latest information is available at Department of Defence, "DMS Manual Replacement," http://www.vcds.forces.gc.ca/dgsp/pubs/rep-pub/dfppc/dms/intro_e.asp; Internet; accessed 27 April 2005.

⁷⁰ Jaeger, "Getting what we need...", 16.

⁷¹ US DoD, @ ..., 2-2.

and the CF will become more responsive. Improved responsiveness leads to a more adaptive posture and a greater propensity to remain relevant in the face of uncertainty. Strategic rigour applied to scenario development, as a precursor to capability-based planning, is therefore the catalyst to a relevant force structure for the CF.

Contemporary CBP theory espouses four main building blocks.⁷² Firstly, CBP requires high-level goals derived from guidance at the grand-strategic level. Secondly, CBP must consider how a military will be employed. Thirdly, CBP uses a standardised lexicon to drive consistency of approach with the aim of reducing the complexity of the long-term defence planning process. And finally, CBP drives the development of required capabilities within the existing resource envelope, that is an optimization of capability development to cost. Taken in this light CBP is an ideal fit for a strategy-led adaptive planning model.

The CF formally adopted CBP as the central notion for long-term defence planning in June 2000. To date, inculcating a capabilities-based mindset has met with varying degrees of success. The Joint Capability Requirements Board (JCRB) has been established with a mandate to "... review proposals, challenge the issues and provide direction for the development of multi-purpose Canadian Forces (CF) capabilities."⁷³ The JCRB serves largely to provide clarifying direction and guidance from a resource allocation perspective once proposals have been tabled, and after considerable project management effort has been expended. This level of review and approval is an overlay on the traditional project management framework and does little to curtail inefficiencies or the duplication of effort. The Capability Goals Matrix is a tool that aims to clarify strategic priorities for planners

⁷² TTCP, , 2.

⁷³ Department of National Defence, "Mandate – Joint Capability Requirements Board," http://www.vcds.forces.gc.ca/dgsp/pubs/commit/jcrb_e.asp; Internet; accessed 03 April 2005.

within a framework of five key capability programs.⁷⁴ Combined with the Canadian Joint Task List and Force Planning Scenarios discussed earlier, a standard lexicon and a hierarchical system of capability partitioning has now been introduced in the CF. While these initiatives are a step in the right direction their application is not common across all three services and a capabilities-based approach is not yet integral to all planning activities across the Department. These are but a few of the many issues highlighted by Byrne and Kerzner. These shortcomings bespeak the need to increase organizational awareness of CBP methodologies⁷⁵ and, move the CF from a ‘capability-based planning mindset’, which could fall prey to procedural dogma, to a fully integrated ‘capability-based organization’ paradigm.⁷⁶ The institutionalization of CBP on a consistent and mandated basis across DND and the CF is critical to the successful implementation of a robust adaptive planning framework.

The 4th phase of adaptive planning strives to unify policy-making with efficient and focused procurement activities. CBP is concept-led, capability-based and scenario-tested.⁷⁷ Thus, CBP offers a viable means of making this linkage and in turn achieving relevance in the face of uncertainty. A disciplined, strategy-led approach will enable identified capability gaps to be filled with new capabilities or addressed through the adaptation of existing ones. To do this in an affordable and timely manner there are two vital aspects for sound decision-making in future force development: modularity and a focus of the effects that a given capability delivers.

⁷⁴ The five capability programs are command and control, conduct operations, sustain forces, generate forces, and corporate policy & strategy. For more detail see DND, * , 20-23.

⁷⁵ L.F. Kerzner, *6* , Report Prepared by the Directorate of Operational Research (Joint) (Ottawa: Department of National Defence, 2004), 2.

⁷⁶ Duncan Byrne, * *8* Report Prepared by the Directorate of Operational Research (Joint) (Ottawa: Department of National Defence, 2004), 42.

⁷⁷ *Ibid.*, 1.

Setting Strategy in Motion

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- Lao Tzu, 604 to 531 B.C.⁷⁸

The fourth phase of the adaptive planning process is . This is an implementation phase where strategic decisions are ultimately translated into specific near-term actions. This is where longer planning horizons intersect the present. In a climate of uncertainty an adaptive posture is necessary to ensure that current capability modules can be deployed or combined in ways that are relevant to the prevailing strategic context. Of course, the long lead times, so typical of defence procurements, make this a daunting challenge. To address this challenge, a shorter planning horizon must be adopted along with a commensurate change in traditional mindsets concerning requirements and procurement practices. Since military platforms are costly, with life cycles as long as 30 years or more, then a capability defined on the basis of a platform is more likely to fail the relevancy test. The reticence to discard capabilities that have outlived their usefulness, or capability surpluses, must also be addressed. With the impetus of working closely with other like-minded nations being a key element of Canadian and allied defence policies⁷⁹, interoperability also needs to be considered in designing modularity and choosing the specific effects a capability will deliver.

As Paul K. Davis of RAND asserts “[t]he essence of capabilities-based planning is to deal with future uncertainty by generating capabilities useable for different purposes and

⁷⁸ Oxford Reference, , ed. Elizabeth Knowles (Oxford: Oxford University Press, 2003) [document on-line]; available from <http://www.oxfordreference.com>; Internet; accessed 16 March 2005.

⁷⁹ As evidenced by: Department of Foreign Affairs, 6 (Ottawa: Government of Canada, 2005); United States, The White House, (Washington, D.C.: U.S. Government Printing Office, September 2002); and, United Kingdom, Ministry of Defence, - (Norwich: HMSO, 2003).

circumstances”.⁸⁰ CBP then, in this context, and recalling our earlier definitions, is ultimately a tool for providing relevant capabilities. CBP produces capability modules that can be assembled to form specific capabilities for a force structure that is relevant to an emerging requirement or mission. Created within an adaptive planning architecture, these relevant capabilities are inherently connected to strategic level policy goals.

The notion of “at-the-time tailoring” or the ability to draw from your capabilities toolbox and assemble the effects required for “at-the-time purposes and circumstances...”⁸¹ is the essence of modularity. This is somewhat different from the current strategic thrust of maintaining tactical self-sustaining units⁸², which can lead to an incorrect focus on the platform or traditional formation. The notion presented here is more correctly described as mission tailoring and provides the potential for creating unique or hybrid formations to suit a specific mission requirement. This further removes the natural tendency to focus upon the platform or equipment as defining a military capability and drives the CF towards realising the synergies and economies of Joint operations. The current thrust towards ‘Jointness’ is not an end-state but merely a means to an end, it simply adds more options for delivering effects in a theatre of operation. “When CBP is properly implemented one of the key benefits lies in its ability to help take the focus away from single-service stovepipes.”⁸³ Capability modules that are defined by the effect they deliver and which may be combined in a variety of combinations and permutations, lends inherent flexibility to force generators. This flexibility facilitates a more adaptive posture and is key to providing greater relevance in uncertain times.

⁸⁰ Davis, “Uncertainty-Sensitive Planning”, 142.

⁸¹ Davis, “Uncertainty-Sensitive Planning”, 143.

⁸² See DND, * , 14-16.

⁸³ TTCP, 3.

Conclusion

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- General Sullivan, US Army Chief of Staff⁸⁴

As articulated in the newly crafted there is now an imperative to evaluate "... force structure on an ongoing basis to ensure that capabilities remain relevant. The status quo is not an option. The Forces will maintain or modernize those capabilities that remain valid, acquire new ones and eliminate those no longer needed."⁸⁵ To achieve this, clear priorities will need to be established. By focusing efforts on essential activities, defence planning and project management actors can compress traditional procurement timelines. Only those initiatives germane to the CF mandate, as assessed against the prevailing strategic context, need to be championed. In a global context that is so uncertain and apt to radical change and upheaval, maintaining a relevant force structure will continue to prove challenging.

An adaptive planning framework, such as the model presented herein, will enable the CF to address this challenge by adopting an approach that confronts the uncertainty principle at each phase of the process. Firstly, the process is fuelled by strategic rigour with a dynamic and continuous step that constantly builds upon lessons learned and in-depth review of the context in which the CF will operate. Sharpe and English conclude, "... to be adaptable to changing circumstances ... structures should be developed

⁸⁴ General Sullivan, US Army Chief of Staff (1992-1995) as quoted by Quadir, Vice-Admiral (retired) Iqbal F. "Challenging Times Ahead - Are We Prepared To Accept Them?" (April 1998).

⁸⁵ Department of Foreign Affairs, 6

as learning mechanisms that process experiences and use them to improve the system.”⁸⁶

The requirement to develop and maintain complete domain awareness is a crucial starting point for adaptive planning.

The strategic rigour continues with the second phase where defence *will* determine the mandate and priorities for the CF. With an eye towards the future, the use of scenarios is critical in defining the roles and situations in which the CF is to act. It is important to note that scenarios are not intended to explicitly predict the future. Instead they offer a means of “... testing various options for organizational restructuring, and of acquiring insights, or clues, about which factors will be most important in shaping the future...”⁸⁷. Adopting a number of alternative scenarios can also mitigate the risk of catastrophic failure in the case that some future conflict should deviate substantially from recent experience.⁸⁸ Proposed force structures need to be tested under challenging conditions to avoid the trap of using invalid methods to design capabilities that fight yesterday’s conflict.

With strategic rigour and top-down driven guidance on priorities, the emphasis shifts away from ‘all-encompassing’ planning and resource management activities by allowing scarce project management resources the necessary focus on essential *scenarios*. With the promulgation of the first major Defence policy statement in eleven years, along with the largest budgetary increase in a generation, then the circumstances must certainly be considered favourable. The top-down guidance, strategic leadership and political-military

⁸⁶ Brigadier-General (retired) G.E. Sharpe and Allan D. English, *4*
* Report prepared for the Canadian Forces Leadership Institute
(Winnipeg: Canadian Forces Training Materiel Production Centre, 2002), xvii.

⁸⁷ Andrew Krepinevich, “Restructuring Defense For A New Era - The Value Of Scenario-Based Planning,”
* (08 April 1996)[journal on-line]; available from
<http://www.csbaonline.org>; Internet; accessed 03 April 05.

⁸⁸ Ibid.

congruence embodied in this new policy direction, so evidently lacking in the past, will now provide focus. It is imperative that bureaucracy and traditional service-driven biases do not blur this focus. Therefore, the institutionalization of capabilities-based planning concepts remains critical to ensuring maximum flexibility and optimal relevance in spite of uncertainty. Broader acceptance of the notion of Jointness and the development of capabilities that are defined by the effects they deliver, and that are designed in a modular format, will drive flexibility and interoperability. As such, the decisions rendered today will not lock the CF into rigid long-term force structures and will afford future governments and commanders the wherewithal to respond to contemporary issues at home and abroad. The ability to provide options to Government and enhance the chances for successful strategic outcomes is the product of bringing relevant capabilities to bear in any given situation.

is aided by assembling capability modules in ways that create tailored force structures to address specific mission requirements. By developing modular capabilities that can be adapted and combined to suit the purpose at hand, obsolescence is deferred and current long-term planning decisions remain valid over time. By inculcating a capability-driven mindset in DND that pervades an adaptive planning approach, the fiscal imperative of choice is addressed in accordance with joint priorities.

The CF must adopt an adaptive planning methodology that constantly reassesses prevailing strategic priorities to best bridge the void between broad guidance and the development of military capabilities. To achieve a role of pride and influence in an uncertain World, the CF must be relevant. To become, and remain relevant, the CF must embrace the uncertainty principle through adaptive planning. “What is needed is to instil an organic process of continuous adaptation as a seamless part of operations and leverage the abilities

and diversity of the entire organization.”⁸⁹ As Hilgevoord and Uffink of the University of Utrecht posit: “... the transition from classical to quantum physics marks a genuine revolution in our understanding of the physical world”.⁹⁰ Similarly, defence planning must adopt a framework that recognises the reality of uncertainty in the global security context. The Canadian Forces “...will never be the biggest military force, so it must be smart, strategic and focused.”⁹¹

⁸⁹ Cyndi Richardson, “Engaging the Entire Organization to Achieve Adaptiveness: A Three Dimensional Approach to Inclusion,” [on-line]; available from <http://d05.cgpublisher.com/proposals/139/index.html>; Internet; accessed 03 April 05.

⁹⁰ Jan Hilgevoord and Jos Uffink, “The Uncertainty Principle,” # Edward N. Zalta (Winter 2001) [on-line]; available from <http://plato.stanford.edu/archives/win2001/entries/qt-uncertainty>; Internet; accessed 17 March 2005.

⁹¹ Office of the Prime Minister, - 4
(Ottawa: Office of the Prime Minister, October 2004), 13.

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