CANADIAN FORCES COLLEGE / COLLÈGE DES FORCES CANADIENNES

JCSP 34 / PCEMI 34

EXERCISE NEW HORIZONS

Canadian Surveillance Requirements, A Capabilities Based Approach

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23 April 2008

ABSTRACT

Canada's 2005 International Policy Statement recognized that "the most critical security issues now facing the Government is its ability to conduct surveillance of our vast territory, airspace and maritime approaches…"[1] Now that the threat has progressed beyond the bipolar to the asymmetric it is difficult to define defence policy requirements in terms of a response to a specific threat. Because the threat is ill defined, a new way for the nation to define its defence requirements is needed. This paper will show that the success that Australia has had in overcoming this problem through the use of capability based planning is applicable to Canada and that Australia's decision to acquire an AEW&C capability in response to its surveillance and control challenges provides Canada with an attractive solution.

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[1] Department of Foreign Affairs and International Trade, *Canada's international policy statement: a role of pride and influence in the world, defence* (Ottawa: DFAIT Canada, 2005), 16.

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INTRODUCTION

The Cold War led to the development of large static forces that had to evolve in response to ever changing threats. The early soviet bomber threat could be countered by radar detection and interception prior to the bombers reaching their targets. As missiles developed, effective physical defences were no longer possible[2] and so the threat of massive retaliation was introduced as a deterrent to possible attack.[3] In order to be credible, this deterrent required early warning of a missile attack to ensure that missiles and bombers could be launched prior to the first soviet missiles impacting.[4] This very dynamic threat environment led to a threat reactive defence policy which, though complex, required more of an algebraic type of analysis.

To the Canadian Air Force, the soviet bomber threat initially meant the construction of an expansive array of interceptor Forward Operating Bases (FOBs) combined with radar detection lines (the Pinetree line (50°), the Mid Canada line (55°), and the Distant Early Warning (DEW) line (70°)) that stretched across the country.[5] These facilities, built and paid for by the American and Canadian governments, were eventually integrated into the world's first fully Integrated Air Defence System (IADS) under NORAD - a bi-national command. Though these facilities were built to counter the threat of attack, they also had the unappreciated effect of providing presence, surveillance, and communications over most of Canada's territory and its air and sea

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approaches. As the threat evolved so did the air defence facilities. In recognition of the growing missile threat, the Mid Canada and Pinetree lines were gradually phased out leaving Canada with little internal surveillance coverage and only a peripheral tripwire detection system in the form of a few coastal radars and a modernized DEW line now called North Warning System (NWS).[6] This forty year arms race, though it kept the world safe, was extremely expensive and so it is not surprising that the abrupt end of the Cold War brought with it incredible pressure on all western governments to cut defence spending.

The end of the Cold War was followed by a period of optimism, but the quick transition to a new world order also created new challenges. Equipped with only their Cold War experience, Canadian policy makers were not ready to transition to an environment lacking the hard threats of the past. Canada's most recent Defence White Paper reflects this. Written in 1994, it was, as all previous Defence White Papers, structured in response to the threat. Facing a large budgetary deficit, the end of the Cold War, an ill defined threat, and keeping in mind that at that time the main focus of the white paper was to realize budgetary savings,[7] it is understandable that this document was not very forward looking and is consequently of little value in guiding the development of the forces today.

This period was further accentuated by instability which led to the unprecedented use of Armed Forces' capabilities in response to peace keeping, peacemaking, and humanitarian crises. And while most of these crises occurred far from Canadian territory,

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[6] Fraser D. Holman, *NORAD in the new millennium…*, 24.

[7] Department of National Defence, *1994 defence white paper* (Ottawa: Canada Communications Group Publishing Canada, 1994), 2.

new challenges now facing Canada are surfacing. These challenges are mainly related to the vastness of Canadian territory, the increasing accessibility to the Arctic and the asymmetric nature of the threat. These challenges require a new way of thinking about what is required in terms of defence policy and capabilities to overcome them. In Canada, this situation alludes to a heightened need for surveillance, detection and control of its territory and approaches which can arguably best be enabled by capable Air Force platforms. This increased demand on reduced forces to meet greater challenges led to the realization that a new way to plan for defence was required.

Against this backdrop, a new method to plan for defence needs evolved in the form of capabilities based planning. In 2000 Australia, a country similar to Canada in size, population density, and political orientation, issued a new Defence White Paper[8] that was the result of this new capabilities based planning method. The conclusions that this Defence White Paper draws are interesting for Canada. Australia, being a maritime middle power, holds its air combat forces as its most important capability since without control of the air all other operations are impossible. From this premise it was recognized that full spectrum continuous surveillance combined with a large enough force to defend the whole territory would be unaffordable. Australia therefore set out to build a small, capable force able to meet the challenges of defending the country.

Through the use of force multipliers, Australia is able to achieve effects over its whole territory despite a numerically small force. Like Canada, Australia's ability to conduct surveillance and control over its vast territory was its most critical security issue. By applying a capabilities based approach to its defence requirements, Australia was able

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[8] Australia, Department of Defence. *Defence 2000: our future defence force*, (Canberra: Defence Publishing Service, 2000)

to develop a plan to acquire the capabilities it was lacking in order of importance. Thus through the acquisition of the Wedgetail (AEW&C) aircraft Australia will resolve much of its surveillance and control needs.

An added benefit to this approach is that Australia is building a small capable multipurpose force that suits Australia's defence requirements. Having a well defined force allows Australia to contribute to international missions in a capacity that its forces are manned, equipped, and trained to accomplish rather than having a mission dictate national needs.

If Canada is to have a well balanced multipurpose force, the defence capabilities plan must be completed and validated and then a credible defence policy must be elaborated laying out the plan as to how Canada is to reach its defence capabilities requirements.

Improper policy planning has led Canada to look to satellites and Uninhabited Aerial Vehicles (UAVs) to solve its surveillance challenges. This paper's thesis is then that while current studies are examining the use of satellites and UAVs[9], in an environment where operations other than conventional war are the norm, a transition from threat based planning to capabilities based planning is required to best demonstrate that the Canadian territorial surveillance and control challenge, resulting from inadequate surveillance systems and a changing defence environment, would most effectively be mitigated through the acquisition of an AEW&C platform.

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[9] Canada's Air Force, News Room, Crew Brief. "Equipment and Capabilities." On-line; available from http://www.airforce.forces.gc.ca/site/newsroom/crew/index_e.asp?id=5280 ; Internet accessed 01 March 2008.

This paper will examine the new defence challenges facing Canada as they are elaborated in the 2005 Canadian International Policy Statement. Then, through an examination of the 2000 Australian Defence White Paper, scrutinize the similarities in difficulties that Canada and Australia face to illustrate where a new capabilities based approach to planning would be helpful to Canada. Finally, this paper will show that Australia's decision to acquire an AEW&C capability in response to its surveillance and control challenges provides Canada with an attractive solution to its own "critical security issues."[10]

NEW CHALLENGES

In 1994, soon after the end of the Cold War and following the *Report of the Special Joint Committee on Canada's Defence Policy 'Security in a changing world'*, the Government of Canada issued the '*1994 DEFENCE WHITE PAPER*'. This document, though recognizing some of the challenges presented by the changing global environment, set out to cut the defence budget in order to "meet the Government's deficit reduction targets."[11] Since 1994 there have been suggestions that these cuts may have been too drastic and certainly were effected prior to having a clear understanding of the environment in which the Canadian Forces would have to operate, or the effects that the Government may want to have on the international scene. What was misunderstood in 1994 is that along with the end of the Cold War the importance of NATO and NORAD

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[10]Department of Foreign Affairs and International Trade, *Canada's international policy statement: a role of pride and influence in the world, defence* (Ottawa: DFAIT Canada, 2005), 16.

[11]Department of National Defence, *1994 defence white paper* (Ottawa: Canada Communications Group Publishing Canada, 1994), 2.

would diminish in turn leading to increased policy independence for Canada, a position which after over 35 years Canada was unprepared for. Where Canada had, since the Second World War, based its defence policy on countering the threats to its security through participation in alliances, the country was now faced with the challenge of redefining its policy in terms of a threat that had all but disappeared.

In 2002 in partial realization of the above, The Standing Committee on National Defence and Veterans Affairs issued a report entitled *Facing Our Responsibilities ; The state of readiness of the Canadian Forces* which highlighted what it thought were the biggest challenges to the Armed Forces.[12] However, armed with little in terms of current National Defence policy, the capability conclusions that the committee drew were debatable. This was recognized by the Government. And in their 25 October, 2002 response to the report they reiterated the throne speech promise to "set out, before the end of this mandate, a long-term direction on international and defence policy that reflects our values and interests and ensures that Canada's military is equipped to fulfill the demands placed upon it."[13] This was accomplished in 2005 through the publication of *CANADA'S INTERNATIONAL POLICY STATEMENT; A Role of Pride and Influence in the World – DEFENCE.[14]* While this document recognized a shift from threat reaction policy making to a more forward looking capability based approach, as we will see, this policy statement's divorce from its old threat based approach is not complete. This statement

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[12]House of Parliament, Facing our responsibilities: the state of readiness of the Canadian Forces (Ottawa: PWGSC Publishing Canada, 2002), 1.

[13]National Defence, "Government response to the Report of The Standing Committee on National Defence and Veterans affairs," On-line; available from http://www.dnd.ca/site/newsroom/view_news_e.asp?id=429 ; Internet; accessed 08 february 2008.

[14] Department of Foreign Affairs and International Trade, *Canada's international policy statement: a role of pride and influence in the world, defence* (Ottawa: DFAIT Canada, 2005).

has identified some new challenges but offers little in terms of analysis as to what is required to defend against them.

Although the 2005 International Policy Statement is less than perfect, it does offer several new challenges to Canadian Defence which we will examine paying particular attention to surveillance and control needs. From an international security perspective Canada has identified "failed and failing states, terrorism, weapons of mass destruction, and regional flash points"[15] as its most likely threats. From a domestic standpoint this document establishes that the ability to conduct surveillance and control of its vast territory, airspace and maritime approaches, and to respond to asymmetric threats[16] is one of the "most critical security issues now facing the government."[17] Further, increasing air traffic over the arctic and climate change, which could lead to more commercial vessel traffic in northern waters, will have "long-term security implications."[18] While these threats are well articulated and are the result of an adequate analysis of Canada's current situation, this policy statement falls short in providing an adequate response to them.

Following its Cold War instincts, the government again tries to prescribe solutions to a perceived threat. The limitations of this approach are that fixation on the problem to be resolved leads to omissions in areas which are not perceived as a threat and the

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[15] Department of Foreign Affairs and International Trade, *Canada's international policy statement: a role of pride and influence in the world, defence…,* 5

[16] Department of Foreign Affairs and International Trade, *Canada's international policy statement: a role of pride and influence in the world, defence…,* 16.

[17] Department of Foreign Affairs and International Trade, *Canada's international policy statement: a role of pride and influence in the world, defence…,* 16.

[18] Department of Foreign Affairs and International Trade, *Canada's international policy statement: a role of pride and influence in the world, defence…,* 17.

temptation to address the problems with what we already have in terms of assets limit the utility of solutions proposed often leading to imbalances that are hard to overcome once they have taken root. To illustrate this point one can point to the 1994 Defence White Paper which failed to anticipate future threats and thus proceeded to cut the forces beyond what was reasonable. Further, as the 2005 International Policy Statement suggests, to offer the modernized Aurora long-range maritime patrol aircraft (an Anti Submarine Warfare (ASW) aircraft with limited surveillance capabilities) as a solution to Canada's surveillance and control challenges is a good example of trying to fill gaps with what we already have. These two examples illustrate poor decisions for Canada arrived at through the flawed threat based planning process.

Alternatively, capability based planning offers an "approach that is, in effect, threat neutral and centres on a range of types of activities that the Canadian Forces must be capable of undertaking in the contemporary security environment."[19] Faced with a similar situation, this approach has in fact been successfully used by the Australian Government in the elaboration of their 2000 Defence White Paper. The following section will examine Australia's experience with capabilities based planning through a review of its 2000 Defence White Paper and through comparison draw conclusions that are applicable to the situation Canada now finds itself in.

AUSTRALIAN WHITE PAPER

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[19]Elinor Sloan, "The Strategic Capability Investment Plan: Origins, Evolution and future Prospects," Canadian Defence & Foreign Affairs Institute (March 2006). On-line; available from http://www.cdfai.org/PDF/The%20Strategic%20Investment%20Plan.pdf ; Internet; accessed 07 February 2008. p.13

As seen below in table 1, Australia being comparable economically, geographically, and in terms of population density and political orientation to Canada, it provides us with an ideal model from which to examine possible policy directions. The 2000 Australian Defence White Paper was produced in response to that country's perception that "the Defence Force was under real pressure to meet an increasingly complex and diverse range of tasks within a budget that had remained relatively constant."[20] Faced with a choice of either cutting capabilities or increasing spending, the Australian government set out to establish what it needed from the Australian Defence Force (ADF) and programming the resources that would allow the ADF to meet these needs. The Australian use of capabilities based planning in arriving at its solutions and the options they chose to pursue in terms of capabilities, in particular in terms of territorial surveillance and control, will be examined more closely.

Table 1 - Canada – Australia Comparison

Country	Total Area	Coastline	Population	GDP
Australia	7 686 850 Km^2	25 760 Km^2	20 434 176	$766.8 B
Canada	9 984 670 Km^2	202 080 Km^2	33 390 141	$ 1.274 T

Source: Central Intelligence Agency, "The World Fact Book – Canada, Australia"[21]

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[20] Australia, Department of Defence. *Defence 2000: our future defence force*, (Canberra: Defence Publishing Service, 2000), VII.

[21] Central IntelligenceAgency, "The World Fact Book-Canada," On-line; available from http://www.cia.gov/library/publications/the-world-factbook/print/ca.html ; internet; accessed 20 March 2008.

During the Cold War threat based planning was the norm. As threats evolved capabilities to counter these threats were devised and so defence policy making was very much a mater of anticipating and reacting to a finite set of threats. With the advent of a more dynamic defence environment where the threat is of a more asymmetric nature the need for a new way to plan for defence is clear and capabilities based planning offers such a tool. Capabilities based planning is generally defined as, a form of all-hazards planning that "addresses the growing uncertainty in the threat environment by using a wide range of possible scenarios to bound requirements and thereby reduce the tendency to fixate on any one threat, hazard, or set of conditions."[22] It differs from the typical Cold War era threat based planning in that the results of this type of planning tend to be applicable to a wider range of situations thereby increasing the relevancy of its conclusions. In the Australian case, faced with, a defence environment that placed high demands on the ADF, an ill defined and changing threat, and limited financial and human resources, the Australian government set out to plan for a force that would be more responsive to their needs and more adaptable to the changing threat environment. Capabilities based planning supplied the tool that would make this transformation possible.

The 2000 Australian Defence White Paper recognizes that the armed forces will remain a key factor in international affairs and that responsible government "cannot dismiss the possibility of major conflict between states."[23] The government believes that the increased instability in the world leads to increased demands on the armed forces

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[22] Capabilities Based Planning. *Overview 12-17* on-line; available from http://www.scd.state.hi.us/grant_docs/Capabilities_Based_Planning_Overview_12_17.pdf ; internet accessed; 21 March 2008.

[23] Australia, Department of Defence. *Defence 2000…,* VIII.

especially in operations other than conventional war and that this will be a lasting trend. Finally, though the efforts of the armed forces are closely integrated with other agencies, these roles are not "to detract from the ADF's core function of defending Australia from armed attack."[24]

Australia's defence is shaped by three principals: self-reliance, control of the air and sea approaches, and proactive operations (the ability to attack hostile forces as far from Australia as possible).[25] In applying these principals, Australia sets its air-combat forces as its most important single capability for without control of the air, all other types of operation are impossible.[26] The air-combat capability includes fighters (F/A-18s), air-to-air refuelling (AAR), Airborne Early Warning and Control (AEW&C), Air Defence Ground Environment (ADGE), and supporting information and surveillance systems. Though this capability is principally aimed at defeating an air attack on Australia, it is flexible and capable enough to provide the same kind of protection to deployed land or maritime forces.

The above capabilities based analysis very clearly states what is expected of the Australian Defence Force from their government without any reference to a specific threat. The advantage of this type of analysis is that national requirements are very clearly stated without the influence of predominant threats which often skew the basic defence requirements. With an accurate understanding of what Australia's basic defence needs are, the government is in a better position to determine how to best protect the

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[24]Australia, Department of Defence. *Defence 2000…,* VIII.

[25]Australia, Department of Defence. *Defence 2000…,* 46-47.

[26]Australia, Department of Defence. *Defence 2000…,* 84-85.

country. For Australia, this translates to the three principals of "self-reliance, control of the air and sea approaches, and proactive operations."[27] Certainly within Canada's 2005 International Policy Statement the elements for a capabilities based analysis are all present but are too often influenced by threats that get thrown into the analysis before an adequate plan to meet Canada's basic needs is developed. For example, this document states that "greater emphasis must be placed on the defence of Canada and North America than in the past. This must be the Canadian Forces' first priority. Current threats demand that we pay increased attention to the safety and security of our citizens at home…"[28] The implication of this statement is that, because of terrorism, Canada must pay closer attention to its security and, while this is true, it takes away from the basic requirement, which is, to defend Canada from all aggressors at all times. By separating this statement from its associated threat a more timeless defence requirement can be deduced and thus a more relevant policy produced.

The next area of particular interest to Canada in Australia's Defence White Paper is Australia's recognition of its Air Combat Forces as its single most important defence capability. While some observers would justly argue that this policy direction is more a function of the proliferation of 4th generation fighters to neighbouring states in recent years, the fact that a numerically small force has limited options to create effects over a vast territory must not be neglected. It is in this latter sense that this policy direction is interesting for Canada.

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[27] Australia, Department of Defence. *Defence 2000…,* 46-47.

[28] Department of Foreign Affairs and International Trade, *Canada's international policy statement: a role of pride and influence in the world, defence…,* 2.

Australia's Maritime Strategy[29] recognizes that the key to defending that continent is to control its air and sea approaches. This does not mean that 100% of the continent's air and sea approaches are controlled 100% of the time. Rather that sufficient surveillance is accomplished to detect threats in a timely fashion and that a credible force capable of dealing with such a threat is available. The years of reduced defence spending prior to 2000 led to major challenges to this capability goal. These took the form of the ageing F/A-18s which are now being modernized and will be augmented with the just announced purchase of 24 Super Hornets.[30] This purchase will ensure a technological advantage over regional adversaries until the arrival of the F-35 (Joint Strike Fighter). Next, recognizing the need for a wide area surveillance and control asset, Australia chose to acquire six AEW&C (Wedgetail) aircraft. The third challenge was the four ageing 707 Air to Air Refuelling (AAR) fleet. To remedy this problem Australia has ordered 5 Airbus 330 (MRTT) tankers, the first of which should be delivered in 2009.[31] Finally, Australia's acquisition of four AN/TPS 77 Mobile Radar systems testifies to this country's commitment to flexible capable forces. It is interesting to note that it is one of these mobile radars that is currently providing air surveillance over southern Afghanistan from Kandahar.

This strategy should be an important one for Canada and while the size of Canada presents a daunting challenge, the 2005 International Policy Statement on Defence is

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[29] Australia, Department of Defence. *Defence 2000…,* 47.

[30]Peter La Franchi, "Support act: Australia's SuperHornet purchase," <u>*Flight International*</u>. (13 March 2007). On-line; available from <u>http://www.flightglobal.com/articles/2007/03/13/212516/support-act-australias-super-hornet</u>... ; Internet; accessed 28 March 2008.

[31]EADS Site, "EADS equips Australia's first A330 Tanker with advanced refuelling boom and underwing pods," (22 March 2007). On-line; available from <u>http://www.eadsnorthamerica.com/1024/en/breaking_news/2007%20Press%20Release/2</u>... ; Internet; accessed 28 March 2008.

clear in stating that "one of the most critical security issues now facing the government is its ability to conduct surveillance of our vast territory, airspace and maritime approaches, and to respond to asymmetric threats."[32] The lack of surveillance and deployable C3 assets however, undermines the government's commitment to this goal. The Canadian Air Force's 2004 Strategic Vectors further warns that:

> To effectively monitor and detect low-flying, small, fast objects such as cruise missiles that could potentially be used asymmetrically against us, Canada needs better airspace surveillance capabilities, especially over our maritime approaches, Canadian cities, and critical infrastructure. The Air Force needs to reconfigure its operational posture and acquire improved active control capabilities to be able to effectively control this type of unwanted activity either approaching, or operating within, our national airspace.[33]

Faced with a similar challenge, Australia acquired six AEW&C aircraft. Though the Australian Wedgetail AEW&C aircraft was not primarily acquired for maritime surveillance, its surface detection volume is approximately 50 000 Km^2 every 10 seconds. This asset actually ensures that Australia can control any portion of its maritime and air approaches at any time. Further, it provides battle management capabilities anywhere and at any time. As DR Carlo Kopp stated, "The strategic importance of the Wedgetail program cannot be overstated – it is the single most important purchase the ADF will have made in the last five decades."[34]

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[32] Department of Foreign Affairs and International Trade, *Canada's international policy statement: a role of pride and influence in the world, defence…,* 16.

[33]Department of National Defence, *Strategic Vectors: the air force transformation vision.* (Ottawa: DND Canada, 2004), 27.

[34]Carlo Kopp, "Wedgetail – Australia's 'Pocket AWACS'," *Air Power Australia* (Last updated 5 Feb 2008) On-line; available from http://www.ausairpower.net/TE-Wedgetail-99.html ; Internet; accessed 07 February 2008. Dr Carlo Kopp is a founding member of *Air Power Australia*, and a prominent authority

Strangely enough Canada has long recognized the importance of AEW&C through its participation in the NATO AWACS program (Canada covers 10% of the costs associated with the 17 aircraft fleet and has approximately 40 aircrew members in this program) and through NORAD, the USAF AWACS fleet (by way of the North American Aerospace Defence Modernization Agreement Canada participated in the acquisition of 12 of the 33 aircraft fleet[35] and has approximately 50 aircrew members flying on the US AWACS). While these arrangements served Canada's purposes well during the Cold War and continue to do so in an alliance context, Canada, due to its increased domestic focus and desire to operate abroad now has a requirement for its own AEW&C. That this capability gap has led the CF to focus on satellites and UAVs, points to a fundamental misunderstanding of "what the CF actually needs to meet domestic and expeditionary operational requirements."[36]

With close to ten million Km^2 of national territory to control timely full spectrum command, control, communication and surveillance is nearly impossible. Canadian requirements for enhanced surveillance and Command Control and Communications (C^3) directed towards national security and sovereignty have now concentrated on utilizing satellites and UAVs. These assets, in isolation of AEW&C, are not capable of generating the solution sought by government.[37]

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[35] Fraser D. Holman, *NORAD in the new millennium…,* 24.

[36]J.M. Hamilton, "AWACS – The Canadian Forces' Missing Link," (Toronto: Canadian Forces College Command and Staff Course New Horizons Paper, 2007), 5.

[37]J.M. Hamilton, "AWACS – The Canadian Forces' Missing Link,"…, 25.

Unlike communications satellites in high geosynchronous orbits, surveillance satellites use low earth, high inclination orbits in order to get a useful resolution of their sensors and to be able to surveil Polar Regions. This type of orbit therefore precludes continuous real time surveillance of Canadian territory. In fact, "the orbit of RADARSAT 2 facilitates coverage of all of Canada [only] every 72 hours, and the Canadian Arctic once daily."[38] Further, RADARSAT 2 is unable to track surface or air tracks and has no Command and Control (C2) capability thereby limiting its usefulness. Satellites are however an excellent cueing tool that can alert authorities of a developing situation in a remote area. Based on this information the government can then mobilize appropriate assets to respond to the particular situation.

Likewise, UAVs are developed to fill a specific role within a system of sensors. They typically respond to cueing from a more strategic asset to go and collect more specific information on a designated target or target area. There are many types of UAVs available for many different applications but given Canada's requirements, UAVs responding to satellite cueing are not a viable option except in very specific tactical situations. To illustrate this point, the RQ-4A/B Global Hawk, currently the most capable UAV, is incapable of real time wide area surveillance, has no detection or tracking capabilities for air targets and again has no C2 capability. The usefulness of such an asset in a domestic role is therefore very tactical. For example, if the government had intelligence that smugglers were bringing drugs in across the Saskatchewan / US border, a UAV could be sent to this area to patrol the border relaying its information to

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[38] J.M. Hamilton, "AWACS – The Canadian Forces' Missing Link,"…, 10.

authorities on the ground who could then deal with the smugglers. Although this type of mission is definitely very useful, it does not fulfil Canada's surveillance requirements.

An AEW&C platform, on the other hand, can operate independently or maximize the benefits of other contributing sensors. It can be on task anywhere within hours immediately coordinating effects to deal with the situation all the while relaying the current situation to higher headquarters. A true force multiplier, AEW&C platforms are capable of real time wide area surveillance detecting and tracking all surface and air tracks within a 50,000 Km^2 area every 10 seconds. The crew provides a command and control capability to air, surface or maritime forces. Through Link 11 and Link 16 the AEW&C platform can relay in real time its air and surface radar pictures to command centres, and through Sat Com stay in voice communication with command centers while operating anywhere in Canada or the world. These platforms are AAR capable, equipped with Electronic Support Measures (ESM) suites and offer tremendous flexibility due to their rapid deployability.[39]

While UAVs and satellites are useful assets to the surveillance of Canada they produce negligible effects on their own. Based on the requirement articulated in Canada's 2005 International Policy Statement, AEW&C platforms are the best suited asset to palliate this need. Proper capabilities based planning would make this clear by determining Canada's capability requirements in a threat neutral framework. This process would expose Canada's capability needs in priority order and show that the acquisition of an AEW&C platform is the most effective way to bridge the identified capability gap.

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[39] J.M. Hamilton, "AWACS – The Canadian Forces' Missing Link,"…, 9

CONCLUSION

During the course of the Cold War, North America through NORAD developed and built a vast array of detection control and defence systems that was essentially designed to ensure western dominance should a conflict occur. The evolution of the threat led to many priority changes which were reflected in the military asset mix. In particular, the Soviet evolution from an air breathing bomber threat to an ICBM threat resulted in the closure of the Mid-Canada line. Then in 1985, the North American Aerospace Defence Modernization (NAADM) agreement in recognition of the cruise missile threat proceeded to acquire 12 more AWACS for the USAF fleet, replaced the DEW Line and coastal radars, and proceeded to eliminate what was left of the Pinetree line radars.[40] These were all rational decisions to a real threat; however, what was not expected was the swiftness of change to come and the instability that shifting security priorities would cause.

Of course western governments, including Canada, rushed to reap the peace dividend paying little attention to the implications that a world environment less dependant on defence alliances would bring to their foreign and defence policies. A case in point is the 1994 Defence White Paper which had as a main objective to reduce the defence budget. As defence planning had always been driven by a perception of the threats to a nation's security, it is no wonder that in an environment where few threats seem credible pressure would be exerted for dramatic cuts in the budget especially in areas of high cost.

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[40] Fraser D. Holman, *NORAD in the new millennium…*, 24.

The events of September 11th 2001 brought a new perspective to the optimistic assumptions of the previous decade. These events brought home the fact that defence was still required and that armed forces as an instrument of policy might be useful. However, the method used for defence planning in the recent past proved inefficient. Western countries needed a range of capabilities to meet their defence and policy goals. Therefore capability based planning was implemented in a number of countries. Australia's 2000 Defence White Paper is the result of such a planning process and appears to provide that government with a more useful policy tool than previous documents of this type in that it provides a more detailed road map for the military's capability development and provides government with a clearer picture of the defence options available to it.

In reviewing its defence capabilities, Australia quickly came to the realization that air combat power was the most important capability to its defence. Being a large, sparsely populated country surrounded by water, control and surveillance of its air and sea approaches was its greatest vulnerability. In a similar way Canada in its 2005 International Policy Statement recognized that "the most critical security issues now facing the Government is its ability to conduct surveillance of our vast territory, airspace and maritime approaches, and to respond to asymmetric threats."[41]   Australia's response to its capability gap was the purchase of an AEW&C platform. Canada already has experience with AEW&C through its participation in NATO and USAF AWACS programs. Due to shifting national requirements the time has now come for Canada to acquire such a platform so that national policy goals can be achieved.

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[41]Department of Foreign Affairs and International Trade, *Canada's international policy statement: a role of pride and influence in the world, defence…,* 16.

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