National Defence Défense nationale

Canadian Forces College

Collège des Forces Canadiennes

SHIELD OF DREAMS? ASSESSING CANADA'S NON-PARTICIPATION IN STRATEGIC BALLISTIC MISSILE DEFENCE

Major C.L. Robidoux

JCSP 38

Master of Defence Studies

Disclaimer

Opinions expressed remain those of the author and do not represent Department of National Defence or Canadian Forces policy. This paper may not be used without written permission.

PCEMI 38

Maîtrise en études de la défense

Avertissement

Les opinons exprimées n'engagent que leurs auteurs et ne reflètent aucunement des politiques du Ministère de la Défense nationale ou des Forces canadiennes. Ce papier ne peut être reproduit sans autorisation écrite.

Canada

CANADIAN FORCES COLLEGE – COLLÈGE DES FORCES CANADIENNES
JCSP 38 – PCEMI 38
2011 – 2012

MASTER OF DEFENCE STUDIES – MAÎTRISE EN ÉTUDES DE LA DÉFENSE

SHIELD OF DREAMS? ASSESSING CANADA'S NON-PARTICIPATION IN STRATEGIC BALLISTIC MISSILE DEFENCE

By Major C.L. Robidoux

Word Count: 14 857

Compte de mots : 14 857

TABLE OF CONTENTS

ABSTRACT

In 2005, Prime Minister Paul Martin made the critical decision not to participate in the American led Ballistic Missile Defence (BMD) program. While the concept of the "missile shield" was not a popular one among voting Canadians, Martin's decision was somewhat surprising, as he had actually requested negotiations with Canada's NORAD partner on the issue. The findings of this paper suggest that Martin's decision of nonparticipation were based on his belief that U.S. BMD capabilities and the threat posed by rogue states was still quite immature, NORAD's future had be secured with the 2006 renewal, and that any potential trade and foreign relations difficulties with the U.S. caused by the decision would be temporary due to Canada's long history as an American ally. Although hindsight has demonstrated that Martin was correct in the opinions that informed his decision, the BMD issue mattered little to frustrated voters, resulting in his election loss of 2006. This paper also suggests that the BMD debate in Canada may endure, given Prime Minister Harper's new majority government. Should he decide to accept the open American invitation into the BMD program, he would alleviate a significant sovereignty concern, namely Canada's current exclusion from the decision making process during an ICBM attack on North America.

INTRODUCTION

> ...we respect the right of the United States to defend itself and its people. Indeed, we will continue to work in partnership with our southern neighbours on the common defence of North America and on continental security. However, ballistic missile defence is not where we will concentrate our efforts.
>
> — Minister of Foreign Affairs, Pierre Pettigrew, 24 February 2005[1]

Ballistic missile defence (BMD), in its various iterations, was certainly a major issue at the time of Pettigrew's announcement in February 2005. Indeed, it had dominated the political landscape in Canada for months prior to Prime Minister Paul Martin's decision to politely decline participation in the latest American plan to defend North America from a limited ballistic missile attack. Due to geographical considerations and shared collective defence interests, Canada had been invited to participate in the North American "missile shield" for decades. The Canadian government, however, rarely seemed ready to depart the comfort and security of "sitting on the fence" and continuously left the Americans unaware of their true intentions with respect to ballistic missile defence. Martin's Liberal Party, bombarded with tough questions from the Americans, Canadian press, and various lobby groups, were desperate to avoid a scenario where they would be tied to the "American missile shield" as a major election issue. All was not well for Martin's minority government, as their support was extremely weak in Quebec due to the advertising scandal, and the New Democratic Party and Bloc Quebecois were aggressively pressing for a Liberal decision of

[1] Steven Staples, *Missile Defence: Round One* (Toronto: James Lorimer & Company Ltd, 2006), 207.

nonparticipation.[2] Additionally, high profile celebrities, former military General officers, and countless academics publically advocated for nonparticipation.[3] The nail in the BMD coffin, however, was an EKOS poll in mid-February 2005 indicated that public opposition to Canadian participation in ballistic missile defence was 54 percent and increasing. Only 34 percent of the nation would support a Martin decision to participate, a three percent decrease over the previous five months.[4] The political pressure became too great for Martin, especially with an election on the horizon. As a result, he directed Pettigrew to make the nonparticipation announcement on 24 February 2005.

Unfortunately for Martin, President George W. Bush ambushed him during a press conference in Halifax in late 2004, stating that he and Martin had "talked about the future of the North American Aerospace Defence Command (NORAD) and how the organization can best meet emerging threats and safeguard our continent against attack from ballistic missiles."[5] There can be little argument that the U.S. government would have strongly preferred Canadian participation and a public display of support and cooperation, but the Americans were prepared to press ahead with BMD unilaterally if required, and were not truly concerned with the outcome of the Canadian decision.[6] This idea is supported by Dr. James Fergusson, Canada's leading authority on ballistic missile defence, who stated that there was no real need to make a decision on BMD participation. After all, there were no ongoing formal negotiations with the U.S. on the terms of

---

[2] James Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again* (Vancouver: UBC Press, 2010), 251.
[3] Fraser A.F. MacKenzie, "Should Canada Re-Examine its Position on Missile Defence?" *Canadian Military Journal* Vol 9, No. 2 (2012): 102.
[4] Staples, 207.
[5] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again,* 249.
[6] David Dyment *Doing the Continental: A New Canadian-American Relationship* (Toronto: Dundurn Press, 2010), 42.

Canadian participation and there was no significant pressure from the U.S., especially given the premature state of the technological aspects of the BMD program.[7]

Pettigrew's announcement was surely frustrating for President Bush and his staff, as he did not return Martin's personal phone call informing him of the decision of nonparticipation.[8] The U.S. Ambassador to Canada, Paul Cellucci, was equally frustrated, stating "We really don't get it. I personally don't think it's in Canada's sovereign interest to be outside the room when a decision is being made about a missile that might be coming towards Canada. We will deploy. We will defend North America."[9] Although Prime Minister Martin had surely expected a negative response from the Americans, one had to wonder about the repercussions for Canada in the coming months and years. Although the Liberals, first under the leadership of former Prime Minister Jean Chrétien, then under the Martin regime, had never committed to join the initiative, talks had been ongoing for years. Nobel Prize winner and Pugwash group founder John Polanyi once warned that "the Canadian government, having held back from President George W. Bush's rush to war in Iraq, appears likely to join his rush to missile defence" and that Canada has "angered the Americans over Iraq, and we must now placate them over missile defence," another indication that a decision to participate was imminent.[10] To his credit, however, Martin required additional information and critical assurances to guarantee Canada's inclusion in the BMD program.

During the 2004 negotiations, Martin told the U.S. government that he would push for participation if there was no additional cost to Canadian taxpayers, no missiles

---

[7] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 250.
[8] Staples, 221.
[9] Ibid, 222.
[10] Mel Hurtig, *Rushing to Armageddon: The Shocking Truth About Canada, Missile Defence, and Star Wars* (Toronto: McClelland & Stewart Ltd, 2004), 182.

based in Canada, the provision of a clearly defined level of influence in the decision making process in the event of a launch against North America, insight into the development and effectiveness of the system, and a guarantee that the weaponization of space would not occur.[11] Obviously, any sovereign government would require a significant amount of detail regarding the operation, effectiveness, and protocols of a defensive system prior to joining the initiative. Unfortunately, the U.S. government required a public decision before any of these details would be released, and refused to clarify their outlook on how Canadian cities would be defended in the event that both Canadian and American cities were attacked simultaneously.[12] With these issues, along with the significant public debate in Canada concerning "fortress North America" and a dearth of public support from voters, Martin had Pettigrew make his announcement.

There are those in Canada who feared that nonparticipation in the BMD program would result in a decline in relations with the United States. In his thesis, Lieutenant-Colonel Ken Stannix suggests that should Canada decline to participate, American patience with Canadian foreign policy would dissipate, and would likely lead to an erosion of relations such as "trade disputes and other, less overt, reprisals being taken" to either punish Canada for its decision or to "encourage" more consideration on the issue.[13] In his work on BMD while completing the National Securities Studies Programme at the Canadian Forces College, Colonel L.G. Gillis agreed, suggesting in his work that "a negative response by Canada to a U.S. request for support would, therefore, further weaken existing bilateral security relations between Canada and the U.S., particularly as

---

[11] Staples, 201.
[12] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 241.
[13] Ken Stannix, "Should Canada Participate in the United States National Missile Defence System?" (Toronto: Canadian Forces College Paper, 2002), 29.

they relate to NORAD," as would Canada's ability to influence American defence planning.[14] Fergusson concurs, stating that Martin's decision "represents a blow to the manner in which bilateral defence, if not broader foreign policy relations, are conducted with the Americans and other nations."[15] Although Canada has enjoyed its place as the United States' most important trading partner and has a privileged position as a NORAD equal, it is entirely possible that Martin's decision may have soured these relations. Had Martin gone too far to secure a more favourable political landscape in Canada in the hopes of cashing in on well known anti-American sentiments to ease pressures on his party leading into the upcoming election?

It has been over seven years since Pettigrew's announcement of Canada's nonparticipation in North American ballistic missile defence. The time has come for a retrospective on the fallout of the Canadian decision to decline the American invitation to cooperate in the ballistic missile defence of the continent. There are countless aspects of domestic politics, foreign policy, collective defence, and trade that, together, contributed to Martin's decision not to participate in BMD. All of these aspects will be examined in depth to demonstrate that Martin's decision did not in fact have the expected negative, long lasting impact suggested by Fergusson, Gillis, and Stannix. It is argued that Martin decided not to participate in BMD because detailed technical characteristics of the BMD system would not be provided, casting doubts on its utility, the rogue state threat was still quite immature, the future of NORAD had been secured prior to the decision, and

[14] L.G. Gillis, "Canada and U.S. Missile Defence: The Case for Participation in, and the Case Against, Space Weaponization." (Toronto: Canadian Forces College Paper, 2004), 31.
[15] James Fergusson, "Shall We Dance? The Missile Defence Decision, NORAD Renewal, and the Future of Canada-U.S. Defence Relations", *Canadian Military Journal* 8, No. 2: 14.

Canada's long history of trade and foreign relations with the U.S. would surely trump one difference of opinion.

The work of Fergusson, Gillis, and Stannix will be used as a starting point to determine the long term effects on Canada as a result of its nonparticipation in BMD. These academics have postulated that due to Canada's decision of nonparticipation in BMD, Canada would likely experience negative consequences in its relations with the United States. In addition, all three have highlighted the significant sovereignty issues of not participating in the decision making process should a missile attack on North America occur. Both of these concepts will be examined in this paper. To complete a legitimate analysis of BMD, many of the technical details of the system will be reviewed in an attempt to determine its perceived utility should a missile be launched against North America. According to Ernest Yanarella and Victoria Samson, the evolution of BMD throughout its inception has progressed at a steady pace, despite the tremendous resources associated with its development, leading to more capable layered missile defence system. The technical details of BMD will be highlighted, as well as Martin's stance on utility of BMD, to shed more light on his decision.

Similarly, an assessment of the nuclear and ballistic missile capabilities of the Democratic People's Republic of Korea (DPRK) and the Islamist Republic of Iran (Iran) will be required. Authors Suk Hi Kim, Victor Cha, and Ash Bali have detailed the nuclear capabilities and defence policies of both countries and have determined that their respective ballistic missile development and nuclear enrichment activities have evolved steadily, resulting in sanctions for both "rogue states." Additionally, all three analysts suggest that the DPRK and Iran will give up their ballistic missile or nuclear programs

willingly, causing grave concerns in the international community. Finally, an analysis of Prime Minister Martin's decision will be conducted. Foreign and defence policy experts James Fergusson, Kim Richard Nossal and Joseph Jockel have suggested that domestic political issues, including popular opinion and election campaign tactics, figured prominently in his decision making process on BMD.

This essay will begin with an in depth analysis of the evolution and technical details of the various BMD systems. It is essential to determine the utility of the current ground-based mid-course (GMD) program, as well the existing tactical BMD systems, as this utility informed Martin's decision on participation. Chapter Two will focus on the nuclear and intercontinental ballistic missile (ICBM) capabilities of specific "states of concern," namely the DPRK and Iran. An examination of their capabilities, foreign policy, and military intent is also required to determine the actual significance of the threat to North America. In the third chapter, Martin's decision of nonparticipation in BMD will be analyzed in detail. If the domestic political landscape and the state of Canada-U.S. relations are made clear, the decision can be scrutinized fairly and more completely. Finally, the follow on effects of the decision of nonparticipation will be discussed in the final chapter. Areas of emphasis will be the analysis of decision's impact on NORAD, Canada-U.S. relations, and trade between the two allies. This will allow for a well rounded, comprehensive and details examination of the costs and benefits to Canada as a result of the decision not to participate in BMD.

Chapter 1

THE EVOLUTION OF BALLISTIC MISSILE DEFENCE

In order to fully understand the reasons behind Martin's decision, a detailed understanding of the threat, as well as the defence against it, is absolutely required. The concept of ballistic missile defence can be traced back to the Second World War. During the last months of the conflict, German scientists began perfecting their long range V-2 rocket systems, which was essentially the precursor to today's cruise missile technology.[16] Although the V-2's guidance and propulsion systems were comparatively immature, the Germans were able to strike at targets deep into Britain. Almost immediately, military strategists and scientists started to discuss effective ways to counter the threat. In the years immediately after the war, the capabilities, accuracy, and ranges of these weapons began to increase significantly, as did tensions between the United States and the Soviet Union.

By 1957, not only had the Soviets developed nuclear weapons, but they were able to successfully launch *Sputnik*, the world's first artificial satellite. Although the Americans were under the assumption that they were the world leading technological power, the Soviet Union's ability to launch an object into orbit exposed the United States' vulnerabilities to attack from what would become known as the intercontinental ballistic missile (ICBM).[17] The Americans were determined to ensure they could field an adequate defence against this type of threat, and efforts to nullify this new capability were redoubled, culminating with the development of the Nike series of ballistic missile

---

[16] Ernest J Yanarella, *The Missile Defense Controversy: Technology in Search of a Mission (* Lexington: The University Press of Kentucky, 2002), 6.
[17] Columba Peoples, *Justifying Ballistic Missile Defense: Technology, Security, and Culture* (Cambridge: Cambridge University Press, 2010), 100.

interceptors. The Nike series of ICBM interceptors, most notably the Nike-Zeus and Nike-X, evolved throughout the late 1950s and early 1960s. Unfortunately, antiballistic missile technology was still at a premature stage, and these missiles were plagued by rudimentary propulsion, guidance, and computational issues.[18]

It became clear to American defence planners that research and development would be crucial to the development of the Nike ABM systems for them to be effective. As result, and due to a growing fear that the Soviets would strike pre-emptively before this technology was perfected, both the U.S. Army and U.S. Air Force (USAF) were charged with improving on the Nike-Zeus and Nike-X systems, including the development of phased array radars which would allow for a fully automated radar system that could acquire, discriminate, and track an ICBM without human assistance.[19] In addition, these missiles were fitted with a 400 kiloton nuclear warhead that was designed to detonate near an ICBM at an altitude of at least 100 kilometres, destroying its payload outside of the atmosphere.[20] It appeared that the dream of a ballistic missile defence was near, as was the deployment of the system.

During this timeframe, the government of Prime Minister Lester B. Pearson was monitoring the American ABM initiative quietly. While it was Pearson's preference to remain outside of the ABM initiative, he worried that Canada's participation in NORAD would mean an "automatic" inclusion in ABM, due to NORAD missile warning mandate. To assuage Pearson's apprehension, U.S. Secretary of Defense Robert McNamara assured him 1967 that participation was optional and that the NORAD agreement would continue regardless of the Canadian decision. Although Canada participated indirectly

---

[18] Yanarella, 90.
[19] Ibid.
[20] Victoria Samson, *American Missile Defense: A Guide to the Issues* (Santa Barbara: Praeger, 2010), 2.

through its NORAD missile warning responsibilities, no Canadian would participate in the command and control of any ABM intercept.[21] Dr. Joel Sokolsky, a noted professor specializing in Canadian foreign and defence policies, suggests that Canada's participation in NORAD provides the government with "not so much a seat at the table as a seat at the console," which allows the Canadian government to participate in NORAD deliberations in the event of a missile attack on North America.[22] The fact that Pearson did not have a seat at the "ABM table" seemed to be an acceptable price to pay for not having to deal with the politically volatile ABM issue in Parliament.

Unfortunately for the developers of the Nike systems, the program was cancelled in 1967 by President Lyndon B. Johnson in favour of the Sentinel ballistic missile defence system. The Sentinel system utilized the long range Spartan and short range Sprint missiles in the first attempt to defend American cities using a layered approach. Both missiles were nuclear tipped to enhance its effectiveness, effectively compensating for their lack of accuracy and guidance.[23] Although Sentinel was far from perfect, and there were doubts that it would be able to actually succeed in the interception of an ICBM, Johnson ordered the system's deployment in 1967 to address the issue of an "ABM gap," which would likely become an issue during the presidential election in 1968.[24]

Upon taking office in early 1969, newly elected President Richard Nixon was initially cautious over the ballistic missile defence concept and immediately ordered a halt to the Sentinel deployment to conduct a month long review of the system and its

---

[21] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 16.
[22] Sokolsky, Joel J. "A Seat at the Table: Canada and its Alliances." *Armed Forces and Society* Vol. 16, No. 1 (Fall 1980), 21.
[23] Peoples, 80.
[24] Yanarella, 170.

capabilities. Nixon was also concerned that the deployment of Sentinel was inherently destabilizing, and could lead to further conflict with the Soviets and Chinese.[25] Upon completion of the review, Nixon and his staffers realized that it was inadvisable to deploy Sentinel to protect major American cities due to the system's projected effectiveness and the astronomical costs of such a deployment. Instead, Nixon decided to shift the administration's thinking on ballistic missile defence. He suggested that a nationwide defence against the Soviet and Chinese ICBM threat was not feasible due to the technology available and the rising costs of research, development, and deployment.[26]

Nixon did see the value in continuing research and development efforts, however, and decided to use Sentinel as a point defence system that would protect America's nuclear ICBM arsenal near Grand Forks, North Dakota against a limited nuclear attack, allowing for the possibility of a retaliatory nuclear strike should this site be targeted.[27] This new endeavour would be called the Safeguard program, the first strategic ballistic missile defence system to actually be deployed. Unfortunately, there were doubts concerning the system's effectiveness, as several defence scientists believed that should the Grand Forks site be attacked by the Soviets, the system would become quickly saturated and overwhelmed and would not be able to distinguish between an actual warhead and penetration aids.[28] Although two radars and 100 interceptors were deployed

---

[25] Michael Nacht, "The Politics: How Did We Get Here?", *Contemporary Nuclear Debates: Missile Defence, Arms Control and Arms Races in the Twenty-First Century* (Cambridge: The MIT Press, 2002), 5.
[26] Ashton B. Carter and David N. Schwartz, *Ballistic Missile Defense* (Washington: The Brookings Institute, 1984), 341.
[27] Yanarella, 145.
[28] Roger Handberg, *Ballistic Missile Defense and the Future of American Security: Agendas, Perceptions, Technology, and Policy* (Westport: Praeger Publishers, 2002), 55.

to Grand Forks, these doubts and rising funding requirements resulted in the decommissioning of the Sentinel system by 1976.[29]

The American obsession with ballistic missile defence resulted in a series of arms control summits in the late 1960s and early 1970s. While some have argued that the Soviets were particularly worried that that existence of American ballistic missile defence interceptors would tip the strategic balance in their favour and eliminate the Soviet nuclear deterrent, the opposite may have actually been true. According to Ernest Yanarella, Soviet strategic doctrine in this timeframe was favourably disposed to the development of anti-ballistic missile (ABM) systems. In June 1967, Premier Kosygin stated that the Soviets did not regard ABM systems as inherently destabilizing, given that they were not offensive in nature and could only provide a thin defence against an ICBM capability.[30] Arms control summits between the Americans and Soviets continued, culminating with the Anti-Ballistic Missile Treaty of 1972.

The ABM Treaty was considered by many as the "crowning achievement of the U.S.-Soviet arms control process."[31] After nearly three years of Strategic Arms Limitation Talks (SALT I), which limited ICBM and submarine-launched ballistic missiles (SLBM) numbers on both sides, the Americans and Soviets further agreed to terms on the ABM treaty. This agreement limited each side to two ABM sites each, separated by no less than 1,300 kilometres, to ensure the provision of limited coverage. Additionally, the treaty specifically banned the deployment of a nationwide ABM

---

[29] Richard L. Garwin, "A Defense That Will Not Defend", *Contemporary Nuclear Debates: Missile Defence, Arms Control and Arms Races in the Twenty-First Century* (Cambridge: The MIT Press, 2002), 31.
[30] Yanarella, 183.
[31] Carter and Schwartz, 221.

system.[32] The treaty was amended in 1974 to further limit both sides to one ABM site each. The Soviets chose to deploy the Galosh ABM system to defend Moscow, with the Americans already having deployed the Safeguard system to defend their ICBM silos in Grand Forks.[33]

Once again, the Canadian government was content to sit on the sidelines and observe the progress of the ABM technology and the resulting negotiations between the U.S. and the Soviet Union. Pearson's successor as Prime Minister, Pierre Trudeau, shared Pearson's scepticism concerning the utility and cost effectiveness of ABM. Additionally, given that satellites were replacing the obsolete northern missile warning radar sites by the 1970s, U.S. representatives stated that "there was no significant value in even fielding ballistic missile early warning radars in sites in northern Canada."[34] Given the fact that Canada had been soft on ABM support over the years, the U.S. realized that Canada would not participate and did not press the issue, much to Trudeau's relief.

While research and development continued on both sides on boost and guidance systems, as well as phased array radars, counter-countermeasures, and command and control systems, very little change occurred on the ABM front until the Reagan administration came to power in the 1980s. One of President Ronald Reagan's most memorable speeches was his "Star Wars" address of 23 March, 1983, when he announced his plans for the Strategic Defense Initiative (SDI). The proposed initiative would conduct research and development in an attempt to establish a system of space-based missile defence systems designed to counter the existing ICBM threat. Reagan

---

[32] Richard Dean Burns and Lester H. Brune, *The Quest for Missile Defenses: 1944-2003* (Claremont: Regina Books, 2003), 72.
[33] Carter and Schwartz, 219.
[34] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 65.

created to Strategic Defense Initiative Organization (SDIO) to investigate different defence options, including kinetic-kill vehicles, chemical lasers, x-ray weapons, and particle beam defensive systems.[35] Both ground and space-based systems would be considered, which would have violated both the ABM Treaty and the Outer Space Treaty of 1967, which prohibited the weaponization of space, had any of the systems been developed and deployed. In total, it is estimated that the cost of SDI was in excess of $70 billion.[36]

Although many of the SDI concepts were technologically non-supportable, at least SDI forced the Canadian government into a public decision on whether the government would cooperate with Washington on the BMD issue. Canada's longstanding adherence and support of the Outer Space Treaty made the Mulroney government's decision not to participate in an endeavour that that would violate it an easy one. As a result, Prime Minister Brian Mulroney announced that although Canada would not participate in SDI, Canadian companies would be free to participate and compete for contracting opportunities should they desire.[37]

The SDIO continued with its efforts to develop and refine these defensive systems throughout the 1980s and early 1990s. Due to the massive expenditures in support of SDI, and given the collapse of the Soviet Union in 1991, President George H.W. Bush chose to move away from SDI in favour of a new program called Global Protection Against Limited Strikes (GPALS), which would be designed to protect against an accidental launch from Russia or China or an attack by a rogue such as Iraq, Iran or North

---

[35] Samson, 185.
[36] Ibid.
[37] James Fergusson, *Canadian Defence and the Canada-U.S. Strategic Partnership: The Aerospace Dimension*, Report Prepared for the Canadian Defence and Foreign Affairs Institute (Calgary: Canadian Defence and Foreign Affairs Institute, 2002), 3.

Korea.[38] GPALS was a scaled down version of SDI that would utilize a network of "Brilliant Pebbles" (BPs), which were small, orbiting satellites that could detect an ICBM launch and deploy a kinetic-kill vehicle to intercept the target while in its boost phase of flight. Bush's GPALS plan required a network of 1000 BPs, along with at least 500 ground-based interceptors designed to intercept the ICBMs during it mid-course phase.[39] The GPALS concept was widely criticized internationally, as any deployment of the system would have violated the AMB and Outer Space Treaties. Unfortunately for Bush, the technological viability and defence worthiness of GPALS could not be proven prior to his election defeat in 1992.[40]

During this timeframe, many wondered if the idea of a ballistic missile defence system was worth the effort and expense that went into its development. Others, such as U.S. Army Lieutenant-General Robert Gard, who was the former president of National Defense University and the Director of the John Tompkins University Center in Bologna, were skeptical that any type of high-speed intercept in the mid-course phase would be successful. In a less than stellar endorsement of BMD, Gard once stated that any missile shield "amounts to putting a useless scarecrow in the sky, that is unlikely to ever work as envisioned."[41] Just as it seemed that ballistic missile defence was losing steam in the United States, Saddam Hussein ordered the Iraqi invasion of Kuwait in August 1990, which resulted in international outrage, condemnation and sanctions against Iraq. Following six months of failed diplomacy and an allied force build up, U.S. and coalition forces began operations in an attempt to expel Iraqi troops from Kuwait on 23 February,

---

[38] Burns and Brune, 131.
[39] Ibid, 138.
[40] Yanarella, 202.
[41] Staples, 141.

1991. Almost immediately, Hussein ordered the launching of SCUD tactical ballistic missiles against targets in Saudi Arabia and Israel.[42]

The timing of the Gulf War is significant to this analysis due to the deployment of the use of the Patriot PAC-2 air defence system. The Patriot was designed to defend against tactical ballistic missiles in the late 1980s and was rushed into service for this conflict. In a fantastic public relations initiative, news outlets televised dozens of Patriot launches and intercepts of SCUD missiles. In addition, the U.S. Army reported that the Patriot's intercept and kill ratios were greater than 90 percent.[43] These kill ratios were later downgraded to 60 percent until the Government Accountability Office (GAO) stated publically that the Patriot's performance was closer to 9 percent effective.[44] While the actual performance of the Patriot is still classified, there are those who believe that the performance of the Patriot missiles was exaggerated significantly in an attempt to convince Congress to continue ballistic missile defence funding. Yanarella states that:

> ...the claims attributed to the Patriot not only proved spectacular, their evidence rested on fallacious data and thus contributed to a campaign of military and administrative deception...painstaking analysis of actual Patriot performance against Iraqi SCUD's, showing how the pretense of success was often constructed from television footage or videos that failed to take into account the intercept dynamics of the Patriot.[45]

Although these tactical systems were nothing like the strategic mid-course interceptors suggested in the SDI or GPALS initiatives, the Patriot publicity machine reinvigorated the ballistic missile defence discussion.

---

[42] Yanarella, 202.
[43] Ibid.
[44] Samson, 98.
[45] Ibid, 202-203.

Bush's surprise defeat to Bill Clinton in the Presidential election of 1992 signalled the end for the proposed GPALS system. As a Democrat, Clinton had very different views on ballistic missile defence than his predecessors, and managed to refocus attention from strategic mid-course systems to theatre defence systems, such as the Patriot. During his tenure, he replaced the SDIO with the Ballistic Missile Defense Organization (BMDO) and proposed spending cuts on the strategic BMD front. As a supporter of the Outer Space Treaty, Clinton also refused to allow the research and development of any space-based weapons, going so far as to state it was "the end of the Star Wars era."[46] Although he was not a strong supporter of the concept of BMD, Clinton was at least cognizant of the billions of dollars that had been spent on the initiative over five decades. As a result, he supported the continued development of a limited BMD capability as a "hedge against an uncertain threat environment created by the proliferation of weapons of mass destruction and ballistic missiles."[47] The Clinton administration would allow the funding for continued research into ballistic missile defence systems that would protect against ICBM from rogue states, but ensured that most of the funding was allocated to the development and deployment of tactical ballistic missile systems to protect American soldiers in theatre.[48]

The revolving door of BMD policies continued with the election of President George W. Bush in 2000. Although Bush did not overtly embrace the SDI and the Brilliant Pebbles ideas of Ronald Reagan and George H.W. Bush, he did put

---

[46] Ibid.
[47] Steven J. Cimbala, *Shield of Dreams: Missile Defense and U.S.-Russian Nuclear Strategy* (Annapolis: Naval Institute Press, 2008), 13.
[48] Burns and Brune, 154.

significantly more emphasis on BMD than Clinton did. During his campaign, Bush acknowledged that "with the spread of technology, distance no longer means security" and went on to say that "North Korea is proving that even a poor and backward country, in the hands of a tyrant, can reach across oceans to threaten us" and that "China possesses the means to incinerate Los Angeles with nuclear weapons," suggesting his strong support of a robust BMD system.[49]

While some may have dismissed Bush's remarks as alarmist in 1999, one need only point to the terrorist attacks of September 11, 2001 (9/11) to prove Bush's point. He was proven correct: distance did not matter anymore. Although these attacks did not involve nuclear weapons or ICBMs, Bush was determined not to be blindsided by a surprise attack of any kind. As a result, he announced the U.S. withdrawal from the ABM Treaty in December, 2001. Just a few months later, he publicized his new security strategy, one that would include the deployment of a layered ballistic missile defence program, replacing the term national missile defense (NMD) with the phrase ground-based mid-course defense (GMD).[50] Due to Bush's influence in Congress, he was able to secure significant budget increases following 9/11 and planned to deploy a multi-layers GMD system by 2004. Free of the constraints of the ABM Treaty, this system would include a new interceptor launch sites at Fort Greely, Alaska, and Vanderberg Air Force Base, in California. Additionally, radar sites would be installed at Thule, Flyingdales, and Cavalier, while a mobile, sea-based X-band radar site would be built and deployed. Finally, ship-based Aegis systems capable of ICBM intercepts in the boost phase would be

---

[49] Peoples, 235.
[50] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 209.

developed and deployed in international waters near "areas of concern" to provide another layer of defence.[51]

While Bush did share many of the cautious views of his predecessor on BMD, he also had strong feelings about the critical requirement for a robust theatre missile defence capability for deployed American forces. Bush ensured that sufficient funding was available to upgrade the Patriot systems to the PAC-3 variant, which were fielded in the Iraq war of 2003. Although PAC-3 developers had not completed their operational test and evaluation process, they were pressed into service regardless, with varying results. During the conflict, the U.S. government released statistics suggesting high intercept and kill ratios, there were widely reported issues with malfunctioning equipment and incidents of fratricide.[52] Bush also supported and secured funding for the next generation of theatre missile defence systems such as the Medium Extended Area Defense System (MEADS), and the Terminal High Altitude Area Defense (THAAD) system. While THAAD has already achieved an initial operating capability, the MEADS system is expected to come into service in the 2015-2017 timeframe. While the THAAD system does possess a limited ability to intercept ICBMs, these systems are tactical systems designed to protect deployed troops against SCUD-type missiles, providing the first layer of the multi-layered defence plan.[53]

Today, President Barak Obama has nearly completed his first term, and BMD still frequently dominated his agenda. Operational test and evaluation has continued on the GMD systems at Fort Greely and Vandenberg, with increasing levels of

---

[51] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 229.
[52] Samson, 103-104.
[53] Ibid,111.

success. Additionally, research and development is ongoing to improve on current radar, intercept, counter-countermeasures, and space-based sensors such as the Space Based Infrared System (SBIRS) and the Space Tracking and Surveillance System (STSS).[54] Finally, President Obama's recent cancellation of a Bush initiative to establish interceptors and radar sites in NATO allies Poland and the Czech Republic to guard against ICBMs launched from the Middle East indicates that he is less inclined to antagonize Russia on the BMD issue than Bush was.[55] Given the proximity of Russia to Poland and the Czech Republic, it is understandable that Russia would be vehemently opposed to the American BMD plan.

In addition, Obama's recent "hot mic" comments to Russian President Dmitry Medvedev at the Nuclear Security Summit in Seoul, South Korea again indicate a less unilateral stance on European BMD than his predecessor. Finishing off a private conversation on BMD, Obama asked Medvedev, with his microphone unknowingly still on, to ask Russian Premier Vladimir Putin to "give him space" on BMD, and that Obama would "have flexibility" to negotiate on the issue following his re-election later in 2012.[56] While the specific direction of BMD is still somewhat uncertain, especially given the political landscape in the U.S. and abroad, these comments suggest that the issue is far from resolved.

Since the Mulroney decision not to participate in SDI, Canada has been deliberately quiet on the issue. Until the 2005 announcement of non-participation, the Chrétien and Martin governments effectively dragged their heels, but created a difficult environment for themselves. By not publically supporting the BMD

---

[54] Ibid, 160.
[55] Fred Kaplan, "What's Obama's Nuclear Endgame?".
[56] Ibid.

program, they risked angering the U.S. and negatively affecting the long-standing NORAD agreement. By not publically denouncing the "missile shield" concept, the government risked alienating voters and taxpayers in a period dominated by minority governments and surprise elections.

In the end, the fact that the United States would not provide Martin with the technical details that he requested concerning the GMD system resulted in lingering doubts as to the system's effectiveness and reliability. One must assume that had Martin truly believed that GMD was an effective defence against an ICBM launched from a rogue state, he would have been more likely to support the program. Unfortunately, it is argued here that Martin decided not to spend any scarce political capital on a controversial issue riddled with reliability issues.

This chapter provides the relevant background on the evolution of BMD over the course of the last five decades. Since the invention of nuclear and ballistic missile technology, attempts to counter these capabilities have resulted in the perceived requirement for BMD, at least to a long line of American governments. Additionally, the analysis of various Canadian perceptions on BMD throughout the history of the concept sheds some light on Canada's negotiating stances and policy decisions. An understanding of this defensive capability will allow for a comprehensive examination of the offensive, namely the nuclear and ballistic missile threat from "states of concern."

Chapter 2

ICBM THREAT ANALYSIS: FACT OR FICTION?

To complete a detailed analysis of the utility of BMD, it is essential to understand where future ICBM threats may come from. The severity of these threats informed Prime Minister Martin's opinions on the utility of BMD, as well as Canada's participation in the program. Given the American experience with 9/11, the U.S. government has elevated its tracking of nuclear and launch capabilities of all of the major players worldwide. Following the elimination of Iraq as a potential nuclear threat following the Iraq War of 2003, the U.S. government identified the Democratic People's Republic of Korea (DPRK) and Iran as the two primary states of concern due to their continued efforts to acquire and develop ICBM and nuclear technology.[57] To better contextualize the potential usefulness of ballistic missile defence, the nuclear and launch capabilities, as well as the foreign policies, or both the DPRK and Iran will be considered in greater detail.

DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

Since the armistice ending the Korean War in 1953, and the subsequent placement of American forces in the Republic of Korea (ROK), the DPRK has demonstrated a continuous concern for its national security. Given the proximity of the nuclear capable American forces in the ROK, North Korea's "founding father," Kim Il-sung, laid the foundation of a nuclear capability by requesting Soviet nuclear training for North Korean students and scientists in the 1950s. As part of this "Atoms for Peace" initiative, the Soviets assisted in the building of a nuclear research reactor in Yongbyon to provide training for North Korean scientists,

[57] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again,* 259.

resulting in a self-sufficient nuclear capability in the DPRK by the 1970s.[58] Throughout the 1970s and 1980s, the DPRK expanded their nuclear program to include the development of graphite-moderated reactors and an experimental five megawatt-electric (MWe) reactor, which enabled the extraction of plutonium from spent fuel. Given that the DPRK was not a member of the Nuclear Non-Proliferation Treaty (NPT) during this timeframe, Pyongyang was not required to declare these nuclear capabilities to the International Atomic Energy Agency (IAEA).

By the early 1990s, the North Korean experimental reactor was able to produce 6 kilograms of weapons-grade plutonium annually, which was enough for one small nuclear weapon. This resulted in a significant diplomatic effort on the part of the Americans to negotiate nuclear controls for the North Koreans, ending with the Agreed Framework of 1994, which stipulated that the DPRK would freeze and eventually dismantle its nuclear capabilities. In exchange, the United States would assist in the construction of two proliferation-resistant nuclear reactors and would provide a significant supply of oil. Finally, the U.S. would attempt to improve relations between the two countries by easing trade restrictions with the DPRK and by providing security assurances.[59]

Unfortunately, the Agreed Framework did not have the desired effect due to a lack of commitment to the agreement on both sides. The Agreed Framework required the DPRK to freeze its *declared* nuclear program, leaving doubts concerning *undeclared* North Korean nuclear capabilities.[60] Additionally, the DPRK continued

---

[58] Ibid.
[59] Burns and Brune, 198.
[60] Andrew O'Neal, *Nuclear Proliferation in Northeast Asia: The Quest for Security* (New York: Palgrave MacMillan, 2007), 60.

with the development of its ballistic missile program and went so far as to conduct a long-range rocket launch over the Japanese archipelago. While the North Koreans claimed that the launch was conducted for the purposes of putting its first satellite into orbit, the Americans feared that the launch was a test for North Korea's Taepodong-1 ICBM, a multiple stage rocket system that could conceivably strike Alaska or Hawaii.[61] Congress shared these doubts and refused to allocate the funding required to construct the promised reactors, further eroding the already tenuous relationship between the two states. Finally, accusations of pursuing alternate nuclear capabilities and uranium enrichment techniques by the Bush administration effectively ended the Agreed Framework and provided the DPRK a convenient excuse to withdraw from the NPT in 2003.[62]

During the last decade, the North Koreans have attempted to refine their ICBM and uranium enrichment techniques in an attempt to develop a home grown nuclear deterrent to the United States, even though they had agreed to a moratorium on missile testing in the early 2000s. Underground nuclear test detonations occurred in 2006 and 2009, clearly demonstrating to the international community that the DPRK had no intention of willingly giving up its nuclear capabilities.[63] Throughout the last decade, a coalition including China, Russia, Japan, the ROK, and the U.S. have engaged the DPRK in the "Six Party Talks," a series of negotiations aimed at convincing the North Koreans to give up their nuclear and ICBM programs, again in exchange for food aid, energy assistance, and a reduction of international sanctions.

---

[61] Yanarella, 209.
[62] Hecker, 217.
[63] Victor D. Cha, "Challenges for North Korea's Nuclear Endgame," in *New Challenges in North Korean Foreign Policy,* ed. Kyung-Ae Park, 185-203 (New York: Palgrave MacMillan, 2010), 187.

Once again, however, the North Koreans have antagonized the international community with ongoing research and development activities and dubious military choices, starting with their sinking of a South Korean corvette in March 2010, and culminating with their latest attempt to launch a satellite into space in April 2012.[64] These actions have jeopardized the Six Party Talks, leaving the international community pondering the way ahead with a potentially nuclear North Korea.

Not only is the North Korean research and development program a significant source of apprehension internationally, but their willingness to proliferate ballistic missiles and nuclear enrichment techniques to other "states of concern" has resulted in increased tensions. As a result of the international trade sanctions against the DPRK, the export of ballistic missiles became a primary means of cash flow for the North Korean government. It has been reported that Pyongyang has exported ballistic missiles on several occasions to Syria, Libya, Pakistan, Iran, and Burma.[65] These proliferation activities have reinforced the American decision to continue its research, development and deployment of a ballistic missile defence system.

Although Canada has not been a participant in the Six Party talks, the Harper government has been active in non-proliferation efforts. In 2009, it announced that Canada would contribute to an international nuclear security fund that would deter nuclear terrorism and ensure the safeguarding of dangerous nuclear materials.[66] In addition, the Canadian government has been very vocal in its concern over North

---

[64] Suk Hi Kim and Bernhard J. Seliger, "U.S. Policy Options on a Nuclear North Korea," in *The Survival of North Korea: Essays on Strategy, Economics, and International Relations,* ed. Suk Hi Kim, Terence Roehrig and Bernhard Seliger, 245-255 (Jefferson: McFarland & Company Publishers, 2011), 246.
[65] Ibid, 248.
[66] Department of Foreign Affairs and International Trade, "Canada Contributes to Multilateral Effort to Prevent Nuclear Terrorism", available from http://www.international.gc.ca/media/aff/news-communiques/2009/386988.aspx?lang= en&view=d; Internet; accessed 04 August 2012.

Korea's continued nuclear testing and its withdrawal from the Six Party Talks. According to former Minister of Foreign Affairs Lawrence Cannon,

> Canada is deeply concerned at North Korea's announcement that it will abandon the Six-Party Talks, expel International Atomic Energy Agency inspectors and restart its nuclear weapons program. It is extremely regrettable that North Korea should now cast aside the Six-Party Talks... North Korea's current actions are alarming and run contrary to its stated desire to engage constructively with the community of nations…It is disconcerting that a regime that has difficulty feeding its own people should invest so much in these programs. Canada calls upon North Korea to immediately resume cooperation with IAEA inspectors and to continue existing disablement activities without interruption.[67]

Given its long tradition as a supporter of non-proliferation and arms control, it is hoped that Canada will be viewed as an honest broker with a credible opinion on the disarmament of North Korea. Even though Canada is one of the only countries in the world to voluntarily give up its nuclear programs, it is doubtful that the DPRK will adhere to its good advice, especially given their nuclear negotiations history. Unfortunately, this type of behaviour has resulted in the United States redoubling its efforts to obtain an effective defensive measure against any long range North Korean attack.

At this point, it is assessed that although the DPRK has enough nuclear materials to build several nuclear weapons, they will not be able to conduct an intercontinental attack on the U.S. in the near term. It is also estimated that going forward, the North Korean nuclear program can develop enough nuclear material to build one weapon annually. The limiting factor in the DPRK's quest to obtain an ICBM is its ability to develop or purchase a multiple stage rocket with an ability to

---

[67] Department of Foreign Affairs and International Trade, "Canada Expresses Concern at North Korean Nuclear Announcement", available from http://www.international .gc.ca/media/aff/news-communiques/ 2009/387062. aspx?lang=en&vw=d; Internet; accessed 04 August 2012.

reach orbit. The unsuccessful North Korean launches of the Unha-2 and Unha-3 rocket carrier systems in April 2009 and April 2012, respectively, indicate a failure to achieve success to this point. The North Korean government, however, has demonstrated a strong willingness to continue with their efforts on this front.[68]

Although penetration into outer space has eluded the North Koreans to this point, eventual success is likely in the long term, especially given the recent success of the Iranian space program to launch several multiple stage rocket systems into orbit.[69] As in the case with ballistic missile technology, multiple stage rocket technology will surely be available between friendly states in the coming years, suggesting that the DPRK will not the tethered to the earth for long. The combination of future ICBM and nuclear technologies is particularly worrisome for the United States, resulting in most American politicians pushing for a continuation of the BMD program.

ISLAMIC REPULIC OF IRAN

The Islamic Republic of Iran has been active in its efforts to develop or obtain nuclear and multiple stage rocket capabilities for decades. As a former ally of the United States and one of the first countries to sign the NPT, Iran began a program devoted to the research of peaceful uses of nuclear energy in the 1950s. The U.S. government sold the Iranians a small research reactor and assisted them in the establishment of the Nuclear Research Center at Tehran University in 1957. Peaceful Iranian nuclear research was conducted quietly for years, resulting in the decision to develop nuclear power plants to save Iranian oil and gas reserves in the

[68] Kim and Seliger, 246.
[69] George Mader, "Assessing the Iranian Missile Threat," *Military Technology*, November 2009, 36.

1970s. This time with German assistance, the Iranians began construction of a new nuclear plant in 1978. Unfortunately, the plant was damaged severely during the Iran-Iraq war of the 1980s. Following the end of the war in 1988, German assistance was requested to complete the project. Due to doubts of the strategic goals of the Khomeini regime following the Iranian Revolution, the Germans declined to provide any assistance, causing the Iranians to begin negotiations with the Soviet Union to complete the reactor in 1992.[70]

Iran continued with its nuclear ambitions throughout the next two decades, eventually developing a nuclear enrichment facility in Natanz and a heavy water reactor in Arak. Although the construction of these facilities itself was not a violation of the NPT, the Iranian decision not to inform the IAEA of their existence resulted in significant concern throughout the international community, as it was widely believed that Iran was developing nuclear weapons.[71] Iran continued to pursue its nuclear interests throughout the 2000s, claiming a desire to produce Low-Enriched Uranium (LEU). Citing the NPT provision of its "inalienable right" to develop a peaceful nuclear energy capability, Iran pursued a home grown enrichment capability similar to those of Japan, Brazil, and South Korea. This led to further apprehension internationally, as Iran's enrichment plant could easily be converted to produce weapons-grade uranium with little or no warning. This apprehension quickly resulted in a series of negotiations with the United Kingdom, France and Germany (the EU-3) to engage in "confidence building measures," which included Iran's voluntary suspension of its uranium conversion and enrichment programs.

---

[70] Ibid.
[71] Ash U. Bali, "At the Nuclear Precipice: Iran," in *At the Nuclear Precipice: Catastrophe or Transformation*, ed. Richard Falk and David Krieger, 97-160 (New York: Palgrave MacMillan, 2008), 98.

Following a series of negotiation failures, the Paris Agreement of 2004 would have allowed Iran an enrichment program for peaceful purposes, but under stringent controls and inspections from the IAEA. This agreement was unacceptable to the Bush government, resulting in significant pressure on the EU-3 to ensure a complete cessation of enrichment activities in Iran.[72] This led to an increased level of animosity between Iran and the United States.

During this timeframe, Iran began a bizarre and antagonistic series of events following the election of Mahmud Ahmadinejad in 2004, leading to a period of intensely strained foreign relations for Tehran. During a World without Zionism conference, Ahmadinejad repeated an old Khomeini quotation, stating that "Israel must disappear from the face of the earth," which was translated to "Israel must be wiped out of the face of the earth."[73] Regardless of the translation error, the damage was done, straining already poor relations with the Israelis. Next, Ahmadinejad's hosting of an international conference on the Holocaust to create "an opportunity for thinkers who cannot express their views freely in Europe" was held, with a guest list that included the likes of known white supremacist and former Ku Klux Klan leader David Duke.[74] Even though Iran had failed to develop nuclear weapons to this point, events such as these informed international opinions in an extremely negative way, further heightening the fear of a nuclear armed Iran. This provocative behaviour made it difficult for Iran to negotiate successfully with the EU-3 and the Americans on nuclear and non-proliferation issues. It also raised questions about Iran's

[72] Ibid, 102.
[73] Hunter, 63.
[74] Ibid.

intentions concerning Israel should they develop a nuclear capability, resulting in further pressures within the United States to develop an effective BMD capability.

During the latter half of the 2000s, Iran continued to alternate between negotiation and aggravation in its dealings with the EU-3, the U.S. and the IAEA on its nuclear activities. Due to its aggressive pursuit of highly enriched uranium (HEU) and its ongoing attempts to weaponize it, the UN Security Council passed several resolutions in recent years demanding cooperation with the IAEA, additional inspections and the imposition of trade sanctions and arms embargos on Iran.[75] A recent resolution from the IAEA on Iran nuclear activities states that the IAEA "expresses deep and increasing concern about the unresolved issues regarding the Iranian nuclear program, including those which need to be clarified to exclude the existence of possible military dimensions."[76] It was clear that Iran had no intention of giving up its nuclear aspirations, even in the face of intense international pressure and in spite of the sanctions imposed against them.

As with the DPRK, Canada has denounced Iranian efforts to develop its nuclear capabilities and its attempts to secure highly enriched uranium. Minister Cannon was particularly forthright in his criticism following the Iranian announcement that it had increased its uranium enrichment from 3.5 percent to a "weapons usable" level of 20 percent. Cannon went on to state that Iran must

> …end its contempt for the international community, address the serious lack of confidence among the international community, and immediately take steps toward transparency and compliance by ending its enrichment activity, ceasing construction of new enrichment sites, and cooperating with International Atomic Energy Agency investigations. Canada will

[75] Bali, 108-109.
[76] International Atomic Energy Agency. "IAEA Board Adopts Resolution on Iran." Online, available from http://www.iaea.org/newscenter/news/2011/iran-resolution.html; internet, accessed 13 August 2012.

> work with other members of the international community toward a solution that will hold Iran to account.[77]

Canada has also been critical of those countries who have attempted to supply Iran with nuclear materials or training. For example, last year Cannon criticized Zimbabwe for its willingness to supply uranium to Iran despite the prohibition of doing so, as stated in United Nations Security Council Resolutions 1737 and 1803.[78] Unfortunately, criticisms such as Cannon's were having little success in these types of situations.

Iran has also been active in its pursuit of a long range ballistic missile capability in parallel to its efforts to achieve a weaponized nuclear capability. Iran has one of the largest inventories of ballistic missiles in the Middle East and has expended significant effort in improving the range and capabilities of these weapons. Although the Iranians were initially bound to the procurement of existing ballistic missile systems for decades, such as the SCUD variants from the Russians, the No Dong missiles from the DPRK and the CSS-8 systems from China, they have recently begun significant research and development in an effort to design and build more effective short and medium range systems.[79] The Iranian government increased funding to its ballistic missile development program in the mid-2000s, achieving moderate upgrades on its systems. Its Shahab series of missiles, based on SCUD and No Dong missiles, were tested extensively and are estimated to have a range of approximately 1300 kilometres (km). [80] Over the last decade, the Iranians have conducted extensive testing and experimented with solid

---

[77] Ibid.
[78] Department of Foreign Affairs and International Trade,"Canada Concerned by Reports of Nuclear Cooperation between Zimbabwe and Iran." Online; available from http://www.international.gc.ca/media/aff/news-communiques/2011/093.aspx?lang=eng&view=d; internet, accessed 13 August 2012.
[79] Steven Hildreth, *Current Debate on Missile Defense* (Hauppaugge: Nova Science Publishers, Inc, 2004), 12.
[80] Central Intelligence Agency, "Unclassified Report to Congress on the Acquisition of Technology and Advanced Conventional Munitions, 1 July through 31 December 2003.

propellants in an attempt to improve missile ranges and reliability. In 2007, Iran reported that it had developed two new ballistic missiles, the Ashura and the Ghadr-1, which were capable of striking targets in excess of 2000 km. Although outside analysts stated that the capabilities of these missiles were likely considerably exaggerated, the Iranian use of solid propellants suggested an improved understanding of ballistic missile technology, further heightening international concerns about Iran's improving weapons capabilities.[81]

Since 2007, Iran has continued in its efforts to improve its ballistic missile arsenal. The Sejil family of solid-propellant missiles were designed as a replacement for the liquid-fueled Shahab missiles. In 2008, Iran announced the testing of the Sejil-1, a two stage missile with a reported range of 2000 km, and followed with the testing of the Sejil-2 in 2009. According to U.S. Secretary of Defense Robert Gates, the upgraded Sejil-2 has a range of between 2000 and 2400 km, and if launched from northwestern Iran, the Sejil-2 could reach from Vienna in the West to the interior of India in the East.[82] Again, the Iranian pursuit of such weapons has resulted in significant apprehension in Europe. As such, many European countries have pushed for a European system of ballistic missile defence.

Finally, the Iranians have also invested significant effort into the stand up of its space program. Following several failed attempts, the Iranian Space Agency successfully launched the Omid satellite on a Safir space launch vehicle (SLV) in early 2009, making Iran the ninth country to launch a domestically built satellite into orbit.[83] Although significant differences exist between a satellite launch vehicle and an ICBM, such as guidance systems, re-entry systems, and targeting systems, the

---

[81] Samson, 15.
[82] Mader, 37.
[83] Samson, 15-16.

Iranian satellite launches suggest that they are improving their multiple stage and solid-propellant technologies and getting closer to eventually development a workable ICBM option. Mastering these techniques will surely result in improved MRBM, and eventually ICBM, ranges and performance, adding weight to the American argument that BMD is will become a critical defensive requirement in the coming years.

ROGUE STATES: IS THE THREAT REAL?

It is without question that Iran and the DPRK are still significantly short of a nuclear ICBM capability. Due to the opacity of both regimes, the intentional misdirection of their capabilities, and the difficulty in acquiring usable intelligence concerning Iranian and North Korean research and development, it is difficult to forecast when this capability will be developed. Given their progress thus far, however, and due to the proliferation of technology and training between like-minded "states of concern," it is possible that both of these countries will develop a marriage between their nuclear and ICBM capabilities in the next decades.

In 1998, the Rumsfeld Commission suggested that Iran and North Korea could develop an ICBM capability, complete with a nuclear warhead, in a little as five to ten years.[84] Obviously, this commission was overly pessimistic in its assessment. More recently, however, the USAF's National Air and Space Intelligence Center (NASIC) stated that "with sufficient foreign assistance, Iran could develop and test an ICBM capable of reaching the United States by 2015."[85] Over time, and with enough assistance from existing nuclear states, either North Korea or Iran could finally develop a home

[84] Nik Hynek, "Missile Defence Discourses and Practices in Relevant Modalities of 21st-Century Deterrence," *Security Dialogue* Vol 41, No. 4 (August 2010), 438.
[85] Samson, 16.

grown nuclear warhead small enough to be delivered on an ICBM. Defence planners must assume that, given their respective anti-American rhetoric and foreign policies, these states of concern could assist each other in the development of this type of weapon, lending credence to the American stance on the critical requirement for BMD, while simultaneously, casting some doubt on Martin's decision of non-participation. Given the immaturity of both the American BMD system and the rogue nation ICBM threat, Martin declined to participate in the program.

This chapter has outlined the potential nuclear and ballistic missile threat posed by Iran and the DPRK. A detailed understanding of the military capabilities, foreign policy choices, and the intent of these states is critical to determining the actual threat to North America. At present, the nuclear and ballistic missile capabilities of both Iran and the DPRK are still too immature to threaten North America with an ICBM. Although these capabilities are advancing in a moderate fashion, the forecasts of groups such as the Rumsfeld Commission have been far too optimistic. The relative immaturity of the Iranian and North Korean threat directly contributed to Martin's decision not to participate in the program.

Chapter 3

CANADA WON'T PARTICIPATE

Before considering the consequences of the government's 2005 decision not to participate in BMD, it is necessary to analyze the contributing factors and political motivations that led Prime Minister Martin to order Pettigrew's announcement. Since the "high tide" of Canada-U.S. relations during the Mulroney era, Liberal Prime Ministers Chrétien and Martin decided to pursue more overtly independent strategic policies. During the late 1990s and early 2000s, Canada opposed several U.S. policies, including landmine usage, nuclear weapons policies, and use of force policies in the former Yugoslavia.[86] Although Canada did participate in the U.S.-led invasion of Afghanistan in 2001 following 9/11, Prime Minister Chrétien loudly refused to participate in the Iraq War of 2003 and was very critical of a wide range of President Bush's foreign policy choices. Trade disputes were common, with softwood lumber and energy distribution issues dominating DFAIT's agenda. Post 9/11 border issues, along with frequent American suggestions that the Canadian border was a "security weakness," soured the relations between the two countries even further.[87]

These events made diplomacy and negotiation difficult in the years leading up to the Canadian elections of 2004 and 2006, in which Martin criticized the U.S. openly for its decisions on the Kyoto Protocol and the Iraq War in an attempt to benefit from a wave of anti-American, and possible anti-Bush, sentiments in Canada. His critiques of President Bush and many aspects of his foreign policy were so frequent that it led

---

[86] Alan Bloomfield and Kim Richard Nossal, "Towards an Explicative Understanding of Strategic Culture: The Cases of Australia and Canada," *Contemporary Security Policy* Vol 28, No. 2 (August 2007), 300.
[87] Kim Richard Nossal, Stephane Roussel and Stephane Paquin, *International Policy and Politics in Canada* (Toronto: Pearson Canada Inc, 2011), 202.

outgoing U.S. Ambassador to Canada David Wilkins to publically admonish Martin, stating "it may be smart election-year politics to thump your chest and criticize your friend and your number one trading partner constantly...but it is a slippery slope...all of us should hope that it doesn't have a long term impact on the relationship."[88]

Domestically, Prime Minister Martin also had his hands full in dealing with the messaging of Canada's participation in the U.S.-led war on terror during the early 2000s. After several years of prideful and steadfast support to its allies following the shocking attacks of 9/11, many Canadians had grown weary of Martin's decision to continue combat operations in Afghanistan. As the war in Afghanistan dragged on, and the number of repatriations of wounded and deceased soldiers increased, Martin's position as Prime Minister became more and more precarious as doubts concerning Canada's participation in combat operations crept into voters' minds. Martin was also constantly on the defensive due to the fallout of the "sponsorship scandal," which rocked the Liberal Party for most of 2004.[89]

As politicians do, Conservative, New Democratic Party (NDP) and Bloc Québecois (BQ) leaders capitalized on these sentiments and events, criticizing Martin at every possible turn. In fact, leaders from all three opposing parties began to realize that by cooperating with each other on important issues, they would outnumber the Liberals in Parliament. This resulted in a decreased power base for the Liberals, making the government averse to sensitive or controversial subjects. Fearful that BMD would become a central issue in an upcoming election, Prime Minister Martin decided to eliminate the issue altogether, even though he has specifically *requested* BMD

---

[88] Ibid.
[89] Joseph Jockel, *Canada in NORAD – 1957-2007: A History* (Montreal: McGill-Queen's University Press, 2007), 175.

negotiations with Washington earlier in the year.[90] During this period of uncertainty due to the soft support of the Liberals in Canada, Martin felt compelled to capitalize politically on significant Canadian misgivings concerning the increasingly unilateral and aggressive American foreign policies, especially among the Québecois, regardless of the backlash from those Americans such as Wilkins. Concerned that Stephen Harper's Conservatives were gaining momentum, Martin began to compare Harper's policies to those of President Bush in an attempt to discredit him in the eyes of the voting public.[91]

It is ironic, however, that Martin hoped to improve relations with the Bush administration by announcing Canada's non-participation in BMD in February 2005. It was his strong desire to put the BMD issue to bed once and for all, providing Canada and the U.S. an opportunity to move on to other important issues, such as border security, trade, and Mad Cow disease.[92] This may have been an effective way to move forward with the Americans had it been executed in a politically savvy manner. Unfortunately, the Martin government made some grave miscalculations and protocol blunders leading up to the announcement.

Only two days after the Canadian Ambassador to the United States had the Bush administration salivating after stating that Canada was "already part" of BMD, Pettigrew announced that participating in BMD was not in Canada's interests.[93] Although the Americans were frustrated that Canada made the decision not to participate so soon after requesting negotiations for its inclusion in the initiative, they were incensed at the manner in which they were informed. Newly appointed U.S. Ambassador Paul Cellucci wrote:

---

[90] Ibid.
[91] Nossal, et al, 115.
[92] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 251.
[93] Jockel, 174.

> What added to the disappointment of the decision was the clumsy manner in which it was announced...Pierre Pettigrew communicated the decision to Secretary of State Condi Rice at the NATO Summit in Brussels...Just as the President was in Europe to show some unity with NATO allies after the rift that had opened over Iraq, our closest ally and next door neighbour chose that moment to signal its rejection of something that we considered to be crucial to our future security. Then there was the fact that the prime minister did not tell the president himself, although the two men were both at the NATO meeting and at several points were standing side by side. But not a word was said. All in all, it was an inept ending to a frustrating process.[94]

Although Prime Minister Martin was already struggling to maintain positive relations with the Bush administration, his handling of this situation would further sour relations with the United States.

This chapter dealt with some of the contributing factors in Martin's decision not to participate in the BMD initiative. Unfortunately, the decision was not necessarily made on the merits of the utility of BMD or on the forecast threat, but was made, at least partially, to avoid a politically sensitive subject during an election year. Prime Minister Martin stated that he had a legitimate desire to get past the BMD issue and address some critical new business with the Bush administration. Unfortunately, his handling of the situation left something to be desired, at least to the Americans, and made his work with the Americans more difficult for the remainder of his term.

---

[94] Ibid.

Chapter 4

EFFECTS OF THE NONPARTICIPATION DECISION

Academics such as James Fergusson and Kim Richard Nossal have suggested that Prime Minister Martin's decision not to participate would result in an array of negative effects for Canada. This chapter will examine the aftermath of the decision to determine if any lingering effects, either positive or negative, can be identified. As such, the growth of NORAD, the resulting Canadian political landscape, trade with the U.S., and the quality of Canada-U.S. political relations following the decision will be examined in detail. Once these outcomes are understood, it will be possible to better analyze the quality of Martin's decision and its consequences to Canada moving forward.

EFFECTS ON NORAD

For over fifty years, NORAD has set the world standard for how a bi-national, collective defence arrangement can function, deter, and evolve in the face of significant exterior threats and a revolving door of security challenges. Following several months of negotiations, NORAD was officially stood up in 1957. Initially, the command was designed to provide air defence for North America against the robust nuclear weapon-armed strategic bomber threat of the Soviet Union. During the first two decades of the arrangement, considerable NORAD infrastructure was designed and built in an attempt to build a credible deterrent to the Soviet threat, and eventually became "the most formidable aerospace defence capability in the world."[95] The capability evolved from continent-wide lines of early warning radar systems, such as the Pinetree, Mid-Canada, and Distant Early Warning (DEW) lines situated in Northern Canada and Alaska, to a

[95] Victor E. Renuart, Jr, Victor E, "The Enduring Value of NORAD," *Joint Force Quarterly* Vol 54 (3rd Quarter 2009), 94.

much more sophisticated space-based surveillance and tracking system in the latter decades. A unique and valued bi-national command, NORAD was given operational control responsibility over a vast and robust aerospace defence force.[96]

If an organization such as NORAD is to survive in the long term, it must be able to effectively deal with the global shocks that are inevitable in a dynamic defence environment. Over the years, the NORAD leadership has done an exceptional job at ensuring its continued evolution despite these shocks, ensuring is long term military utility and relevance. Although originally designed to deter and warn of a Soviet bomber attack on North America, NORAD seamlessly refocused once the Soviet Union developed its ICBM capability. The command quickly developed an early warning and missile tracking capability that could operate in parallel with its bomber detection responsibilities. Once technology and engineering permitted, NORAD was one of the first agencies to take advantage of outer space, effectively conducting remote sensing, communications, and missile tracking to optimal effect.[97] If anything, NORAD was exceptionally resilient, demonstrating an uncanny ability to expand its roles and improve its practices in the name of effective collective defence.

This resilience was demonstrated during one of the most significant shocks in recent years, namely the collapse of the Soviet Union in 1991. NORAD's singular focus for decades was the monitoring, warning and deterrence of any Soviet airborne or ICBM threat. Had NORAD's *raison d'être* disappeared along with the Soviet Union? Improved relations with the new Russian government in the 1990s led to arms reductions, which led to a mutual "de-targetting" of Moscow and Washington and it was feared that

[96] Jockel, 27.
[97] Ibid, 156.

NORAD had outlived its usefulness.[98] However, ever resilient, NORAD once again refocused its responsibilities to counter-narcotics surveillance, as well as augmented tracking of space activities and orbital debris. In spite of the new political and security landscape, the NORAD agreement was renewed in 1996.[99]

Another significant shock that had a notable effect on NORAD was the terrorist attacks on the U.S. on 9/11. While NORAD was responsible for the detection and warning of airborne and ICBM threats to North America, it was not designed to detect or react to threats emanating from somewhere on the continent itself. As NORAD Deputy Commander Lieutenant-General Ken Pennie said after 9/11, "we'd been doing this job for 43 years, and nobody anticipated what happened on the 11th of September."[100] Following the attacks, many questioned NORAD's utility in a post-Cold War environment. For example, during the 9/11 Commission, Commissioner Richard Ben-Veniste asked the Commander of the Continental U.S. Region "how is it that NORAD is still focusing outward protecting the United States against attacks from the Soviet Union or elsewhere, and not better prepared to defend against the hijacking scenarios of a commercial jet laden with fuel used as a weapon to target citizens of the United States?"[101] It was surely a difficult question to answer for NORAD. The bi-national command's leadership learned from this event, however, and took on a variety of new defence and surveillance responsibilities as a result of President Bush's direction to adopt a military posture of "full spectrum dominance." [102] These new responsibilities included

---

[98] Nossal, et al, 29-30.
[99] Alan Stephenson, *Securing the Continent: Where is NORAD Today,* Strategic Studies Working Group Papers (Calgary: Canadian Defence and Foreign Affairs Institute, 2011), 7.
[100] Jockel, 166.
[101] Ibid, 165.
[102] Nossal, et al, 30.

the detection and intercept of domestic, airborne "targets of interest," maritime surveillance, and the surveillance and the provision of armed air patrols during significant events such as the Olympics, G8 Summits, or the Super Bowl.

Even after decades of successes and resilience in the collective defence of North America in an exceptionally dynamic environment, some believed that Canada's decision not to participate in the American BMD plan in 2005 would result significant changes for, if not the end of, the NORAD arrangement. This scenario would have been devastating, as participation in NORAD resulted in significant access to American defence plans, space-based initiatives, and strategic developments. In this respect, NORAD was much more important for Canada than it was for the United States, and the loss of NORAD meant a considerable loss of access.[103] This would have been unfortunate, given that Canada was essentially a free rider in NORAD, enjoying a considerable return on a very modest investment. Luckily for Canada, decades of cooperation on continental defence would not be shaken by one fumbled policy decision, even if it was exceedingly embarrassing for the Americans.

As stated previously, negotiations occurred between key Canadian and U.S. players to determine the extent, if any, that Canada would participate in BMD in the months prior to the Pettigrew announcement. There was reason for optimism on the Americans' part, especially given a statement from Minister of National Defence David Pratt, who stated that "it is our intent to negotiate in the coming months a Missile Defence Framework Memorandum of Understanding (MOU) with the United States with the objective of including Canada as a participant in the current U.S. missile defence

---

[103] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 221.

program and expanding and enhancing information exchange."[104] With this in mind, U.S Secretary of Defense Donald Rumsfeld suggested breaking up the negotiations into two parts. Firstly, the NORAD agreement would be renegotiated to allow for NORAD's provision of integrated tactical warning and attack assessment (ITW/AA) to the missile defence system, regardless of the Canadian decision to participate or not. As McKenna would suggest later on, one way or another, Canada would be "part of it." The alternative would have been to take the ITW/AA function from NORAD due to the bilateral nature of the organization, essentially eliminating much of NORAD's function and utility.[105] Fortunately, the NORAD agreement was renegotiated quickly and officially amended in August 2004.[106]

The second part of the negotiation would occur later, where Canada and the U.S. would discuss the specific nature of the Canadian involvement, command and control issues, prioritization of targets to protect, and the costs involved. Before Canada would participate in the program, very detailed answers to these questions had to be provided by the Americans. In addition, Canadian officials requested technical details of the ground-based mid course systems, sensors, and for consideration by Canadian scientists. Before Prime Minister Martin signed on, especially given the opposition among Canadians, he had to get an idea if the system would actually work. Finally, Martin required assurances that future iterations of the BMD system would not involve space based interceptors, as this was considered "weaponizing" space according to the Outer Space Treaty. Unfortunately, the Americans required a firm and public "yes" before any classified information would be provided and certainly would not guarantee that they would never

---

[104] Jockel, 173.
[105] Ibid.
[106] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 248.

actually design and launch satellites with defensive capabilities. At this point, negotiations became increasingly difficult, culminating with Bush's ambush of Martin in Halifax. These negotiating points, along with the soft support on BMD with voters, directly led to Martin's decision not to participate. It is interesting to note, however, that Canada only declined to participate in BMD *after* the new NORAD renegotiation was formalized just months earlier, giving Martin a longer "window" into American operations and strategic policies.[107]

A key question, at least as far as NORAD is concerned, is how did Martin's decision not to participate in BMD really affect NORAD? Following the announcement, Dr. James Fergusson wondered whether the United States would have doubts about Canada's reliability and credibility as a partner in the defence arrangement and whether an "offset" would be expected.[108] Whether it was expected or not, an offset of sorts was delivered just prior to Pettigrew's BMD speech. Just the day before breaking the bad news, the Liberal government announced a significant defence spending increase, possibly to maintain the perception of Canada as an effective and committed ally. In addition, shortly after this announcement the Martin government announced that Canada would take on a much more significant combat role in Afghanistan to further assist the Americans in the war on terror.[109] While it is impossible to know whether these decisions were meant to alleviate foreign relations tensions between Canada and the U.S., they likely did so regardless, at least to some extent. Given that the NORAD renewal of 2004 had given Canada some time to regroup, it is quite possible that these spending and

---

[107] Brian W. Tomlin, Norman Hillmer and Fen Osler Hampson, *Canada's International Policies: Agendas, Alternatives, and Politics* (Don Mills: Oxford University Press, 2008), 112.
[108] James Fergusson, "Shall We Dance? The Missile Defence Decision, NORAD Renewal, and the Future of Canada-U.S. Defence Relations", *Canadian Military Journal* Vol 8, No. 2 (Summer 2005), 14.
[109] Nossal, et al, 173.

deployment commitments alleviated any lingering American doubts concerning Canada's commitment to collective defence. If anyone was worried that NORAD would suffer as a consequence of Canada's decision on BMD, these worries seemed to have been alleviated by the end of the summer of 2005.

By late 2005, the lessons from 9/11 had been learned, resulting in a more robust aerospace tracking posture, and Canada and the United States had agreed on NORAD's provision of ITW/AA data for GMD, but with no implicit Canadian participation in its command, control or defence prioritization. While the U.S. was not going to need ITW/AA data from NORAD forever, as it had other means of obtaining this information, it made political sense to continue to use NORAD for this function, as it provided an existing and well understood mechanism for communicating an attack warning to Canada.[110] Finally, having Canadians continue their contribution to NORAD, and having NORAD provide the crucial ITW/AA data for the GMD system, left a small crack in the door should Canada ever decide to reconsider their decision to contribute to the GMD initiative.

It was clear that both Canada and the U.S. were determined to get over the BMD issue. Starting in 2006, significant changes started to occur at NORAD. Firstly, NORAD Headquarters moved out of Cheyenne Mountain and into its new operations centre at Peterson Air Force Base in Colorado Springs. Next, NORAD added a maritime surveillance responsibility to its aerospace and space surveillance duties, tracking targets of interest on the maritime approaches to North America. Canada and the U.S. also made the surprising decision to make the NORAD partnership a permanent one on 8 May 2006,

[110] Fergusson, "Shall We Dance? The Missile Defence Decision, NORAD Renewal, and the Future of Canada-U.S. Defence Relations", 18.

removing the requirement for renegotiation every five years, a mere fifteen months after Pettigrew's announcement.[111]

NORAD was also affected in a positive manner when the Tri-Command Framework was signed by the commanders of USNORTHCOM, NORAD, and Canada Command in September 2009. Following nearly two years of study and negotiation, the Tri-Command Framework was created to clearly define the command relationships, responsibilities, and liaison and support structures between the three commands charged with the collective defence of North America. One significant benefit of the Tri-Command Framework is that it acknowledges that there are unique missions in which sovereignty issues are paramount, and allows for unilateral action as required, even though NORAD, a bilateral command, is supporting. This clause allows for significant NORAD support to either Canada or the United States for an event such as the 2010 Olympics in Vancouver.[112]

When dealing with sophisticated military organizations operating robust forces, changes occur frequently. Beginning in late 2012, Canada Command will be amalgamated with several other Canadian Forces commands and will become known as the Joint Operations Centre (JOC). Due to the significant positive change concerning NORAD and the Tri-Command Framework, it must be assumed that these adjustments will survive this latest Canadian command transformation. A simple substitution of the JOC for Canada Command should occur, resulting in a reasonably seamless transition for NORAD. While there will likely be some minor growing pains, it is expected that the

[111] Nossal, et al, 343.
[112] Ibid.

new JOC leadership will have to consider how the NORAD and USNORTHCOM command and control relationships will be incorporated in the new JOC structure.

It was only natural for academics such as Fergusson, Stannix, and Gillis to wonder if a decision not to participate in BMD would result in negative effects, or even the end of, NORAD. It was clear that the Americans would proceed with BMD regardless of Canada's decision. It was equally clear that they would obtain the ITW/AA data that they required from somewhere, and that they were prepared to move that function from NORAD if required, significantly stripping from the organization's core responsibilities. Given the considerable growth at NORAD since the Martin decision, as well as the permanent renewal of 2006, it can be unequivocally stated that the decision had no negative effects on NORAD's future. It must be conceded, however, that this is mostly due to Canada's decision to allow NORAD to provide the ITW/AA data to the U.S. GMD system in 2004. Finally, it also must be conceded that Martin may have been right in his assessment that resolving the BMD issue once and for all would allow Canada and the United States to press ahead with new business. This has allowed for growth in NORAD's mandate and resulted in a more robust continental defence capability.

POLITICAL EFFECTS

Any comprehensive analysis of Canada's decision on nonparticipation in BMD would be incomplete without an analysis of the political fallout of the decision. Although direct linkages between the decision and the post-announcement political landscape would be difficult to establish, trends can be identified and analyzed to determine the likely extent of the decision's effects. Given that Martin's decision not to accept the American invitation into a BMD arrangement was made primarily due to domestic non-

support of the issue, an analysis of whether this decision benefitted the Liberals politically is required.

The domestic political difficulties of the Liberals prior to the BMD announcement have already been clearly established. Many of Martin's hardships in early 2005 were as a result of the Sponsorship Scandal and resulting Gomery Inquiry. This scandal dominated Canadian politics for most of 2005, and resulted in decreased support for the Liberal Party, especially in Quebec. Harper's Conservatives and Gilles Duceppe's Bloc Québecois attempted to coordinate a no-confidence vote in Parliament; however, Belinda Stronach's infamous "crossing of the floor" likely bought Martin a few additional months as Prime Minister.[113]

Martin spent the remainder of 2005 conducting damage control and preparing for the January 2006 election, where his primary platform issues were healthcare, tax cuts, and daycare improvements. Although he was attempting to portray the image that he was cleaning up the Liberal party following the Gomery Inquiry, the damage was done. Martin would go on to lose the election of 2006, with Harper's Conservatives winning a minority government. With all of the negotiations with the U.S. on BMD in 2004 and 2005, there is no evidence that the Martin decision on BMD became a major election issue, one way or the other. Although Martin had attempted to capitalize on the prevailing anti-Bush and anti-Iraq War sentiments during his campaign, he was unable to repair the Liberals' image in time for the election. Given the magnitude of the Sponsorship Scandal and the timing of the Gomery Inquiry, and the resulting negative perception of the Liberals by voting Canadians, it is argued here that Martin's decision

---

[113] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 251.

not to participate in BMD became an insignificant election issue and neither helped nor hindered his election bid.

Upon his election as Prime Minister, Harper's main priorities were improving Canada-U.S. relations and ensuring adequate support for the Canadian Forces' mission in Afghanistan.[114] Although he had once favoured Canadian participation in the BMD endeavour, he did not press the issue with the Americans. To date, neither the Bush nor Obama administrations have publically requested Canadian support on BMD. Given that there is no plan to place interceptors or radars on Canadian soil, it is argued here that there is no pressing need to reopening talks on the issue, at least as far as the United States is concerned.

TRADE EFFECTS

It is also necessary to analyze the Canada-U.S. trade relationship to determine if there were any economic effects from not participating in the missile shield. According to Fergusson, the possibility existed for a "spillover into the wider defence industrial relationship that could damage Canada's economy" should Martin chose not to participate in BMD.[115] In any scenario where Canada lost its privileged position as America's closest ally and trading partner, the Canadian economy would surely suffer significantly.

To begin the analysis, exports from Canada to the United States will be compared from the years 2005 through 2007 to determine any unexplainable and decreasing trends. Surely, if any Canadian foreign defence policy decisions disturbed the U.S. government enough to result in an American decision to discourage trade with Canada, any reduction

---

[114] Nossal, et al, 173.
[115] Fergusson, *Déjà vu: Canada, NORAD, and Ballistic Missile Defence* (Winnipeg: Centre for Defence and Security Studies, 2000), 22.

in exports would surely be reflected in the Statistics Canada data on international trade. According to Statistics Canada, the percentage of Canadian exporting companies who exported goods and services to the United States was constant at approximately 82 percent from 2005 to 2007. The total value of these exports rose by 12 percent from 2005 to 2006, and then by another 2 percent the following year.[116] This increase in exports to the United States suggests positive growth in international trade during the timeframe immediately following the BMD announcement.

As for the imports to Canada from the United States, similar growth occurred between 2005 and 2007. During this period, import growth was steady at 3 percent annually, which was consistent with the import growth of the partnership since 2002. Additionally, imports in the machinery and electrical equipment sectors, commodity groups that would include technologies associated with either NORAD or the American GMD system, all enjoyed growth during the mid-2000s.[117] It must be conceded that statistics alone cannot prove that the decision on Canadian participation on BMD negatively affected trade between Canada and the United States. However, given that there was never any stated direction from the Bush administration to decrease trade with Canada, and that the statistics demonstrate moderate import/export growth, it could be surmised that Fergusson's suggestion that the Martin decision could negatively affect trade would prove to be pessimistic.

In addition, negotiations occurred on several other trade fronts in 2005 and 2006, particularly on the softwood lumber issue. Within months of his election, Harper had

[116] Ibid, 23.
[117] Ibid, 13.

negotiated a compromise on the issue, resulting in a seven year renewable agreement.[118] Next on Harper's U.S. relations and trade agenda was the negotiation of the acquisition of four heavy C-17 Globemaster aircraft for the Canadian Forces. Not only was he able to "jump the queue" on the acquisition of this strategic airlift resource, but Canada was able to secure valuable and heavily sought after training slots provided by the United States Air Force.[119] These examples illustrate further the improving relationship with the United States in 2005 and 2006, dispelling any thought of a protracted souring of trade relations following the Pettigrew announcement.

EFFECTS ON CANADA-U.S. RELATIONS

Immediately following Pettigrew's announcement in February 2005, relations with the Bush administration were strained to say the least. Immediately following the announcement, Martin attempted to call President Bush to discuss the decision, but Bush was "unavailable" and could not take the call.[120] In addition, although not implicitly stated, Secretary Rumsfeld was furious at the decision, especially given that the U.S. had not asked Canada for any resources, just a commitment to support the American efforts. Finally, Rumsfeld complained that the Canadians had handled the announcement horribly, and felt insulted at being used as a "crass tool" to garner votes for the upcoming election.[121] Bush and Rumsfeld were not the only American officials who were put off by the decision and the lack of finesse of the announcement. U.S. Ambassador Paul Cellucci was reportedly "perplexed" by the decision, and U.S. Secretary of State

---

[118] Nossal, et al, 202.
[119] Holly Bridges, "C17 Training at a Glace." *The Maple Leaf* Vol. 10, No. 6 (27 February 2007), 11.
[120] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 254.
[121] Ibid.

Condoleezza Rice immediately postponed a planned business trip to Ottawa.[122] Not only was the pressure on Martin domestically because of the Sponsorship Scandal, but he was getting the cold shoulder from the Bush administration as well.

During the remaining months of 2005, Martin seemed oblivious to this cold shoulder, frequently criticizing the Bush administration on a variety of issues. His criticism of Bush's decision not to sign the Kyoto Accord was particularly harsh. His decision to go out of his way to arrange a special photo opportunity with former U.S. President Bill Clinton in support of Kyoto was downright antagonistic.[123] The Bush-Martin relationship was a bitter one until his defeat in the 2006 federal election.

In contrast, the Harper government enjoyed a much better relationship with their American counterparts. As stated previously, many negotiations were successfully completed during the first months of Harper's term. In addition, during Harper's first term, the new Prime Minister was able to cooperate with the Bush administration on the issues of Iran and North Korean sanctions, non-proliferation and nuclear disarmament, condemnation of human rights atrocities, and reconstruction efforts in Afghanistan and Haiti. Given the Harper government's ability to negotiate quality agreements with the United States so soon after a long period of strained relations, there is no indication that the Bush administration had any intention of politically punishing Canada for its decision not to participate in BMD.[124] If anything, relations with the Martin regime suffered, partly as a result of nonstandard protocol upon the announcement of the decision.

As we have seen in this chapter, Martin's desire to move on from the BMD issue in an attempt to focus on other priority files with the United States was effective, but

---

[122] Nossal, et al, 171.
[123] Ibid, 172.
[124] Fergusson, *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again*, 253.

unfortunately is was for the Harper government, given his election loss of 2006. Harper was able to capitalize on his election victory and improve relations with the U.S. Due to these improved relations, as well as a continued strong economic and trade relationship with the Americans, it is argued that the Martin decision not to participate in BMD did not result in any long-term negative consequences for Canada.

CONLUSION - CANADA, BMD, AND THE FUTURE

It has been several years since the Martin decision, and very little has changed for the Harper government on the issue. While Fergusson and others have assessed that Harper's Conservatives would be willing to entertain future discussions on participation in the American GMD plan, there has been no public indication that the Obama administration is inclined to reopen discussions. Since Canada agreed that NORAD would provide the required ITW/AA data to the GMD system, and given that there is no current plan to request the use of Canadian territory for ground based interceptors, radars, or other infrastructure, there would be very little reason to revive the issue from an American perspective. It is clear, however, that the U.S. intends to continue with its efforts to provide a layered defence of North American and its forward deployed troops, regardless of Canada's opinion on the matter.

As stated earlier, the nuclear ICBM capabilities of the DPRK and Iran are likely years, and possibly decades, away from maturity. Given the research, development and testing difficulties of some of the American BMD systems, it is plausible that both sets of capabilities may mature in parallel. While these capabilities develop, Canada should be an active participant on the world stage to ensure a more secure future for its allies. There are three ways that it can accomplish this goal.

Firstly, Canada must continue to be an advocate and set an example for responsible military operations. Canada's continued support of the United Nations Security Council Resolutions concerning sanctions on Iran and the DPRK are critical to promoting nuclear responsibility. As long as these rogue nations continue to develop their clandestine nuclear programs, Canada and its allies are less secure. Always active

on the non-proliferation front, Canada must continue to set the example, such as in its participation in the NPT, the Comprehensive Nuclear Test Ban Treaty, and the Fissile Material Cut-off Treaty. Additionally, the Harper government will surely continue to encourage disarmament and mutual arms reductions of the world's nuclear powers. It is crucial for Canada to encourage its allies, as well as "states of concern," to adhere to the restrictions set out in the Outer Space Treaty. While space will be utilized for military applications such as satellite communications, navigation, and remote sensing, the weaponization of space could result in a new "arms race" that would heighten tensions and utilize scarce resources that could be used for more beneficial endeavours. It is also important for Canada to continue to lead the way on non-nuclear issues. An excellent example is Canada's continued efforts on the banning of anti-personnel landmines and its support of human rights issues internationally. By continuing to be a respected and trusted advocate on these critical matters, Canada may be able to subtly influence the foreign and defence policies of various states in a positive way.

Secondly, the Harper administration must continue to refocus and build on the capabilities of NORAD. Canada and the U.S. share a unique opportunity to cooperate closely and in an interoperable fashion to ensure the collective defence of an entire continent. Threats to North America will continue in the coming years and NORAD must be ready to meet these security challenges. Although there will not likely be Russian Bears flying over the North Pole with their nuclear payloads, NORAD must be vigilant in its monitoring of the maritime approaches to the continent, as well as incorporate a more robust land monitoring capability. As General Renuart stated, NORAD is the most formidable and effective aerospace defence organization in history

and has proved to be an excellent deterrent to those who would threaten Canada or the United States. Canada must ensure that it does everything in its power to ensure NORAD's continued effectiveness.

Lastly, Prime Minister Harper should engage the United States in a committed fashion to request formal participation as a partner in the ballistic missile defence of North America. Even though successive Canadian Prime Ministers have failed to commit to this endeavour, which has cost Canada an opportunity to provide any inputs into the design and deployment of GMD, it may still be able to salvage a modicum of input into the manner that this GMD system will be utilized in the future. For Canada, the United States' closest neighbour, to choose to not participate in the decision making process during an ICBM attack on North America is a self-induced affront to its own sovereignty. Former NORAD Deputy CinC Retired Lieutenant-General George MacDonald agrees, stating that "Canada has given up its sovereign responsibility to defend itself against ballistic missiles, while substantively, it is argued that Canada will now be dependent on the U.S. to provide that defence at U.S. discretion on U.S. terms."[125] Given the recent estimates of the forecast nuclear and ICBM capabilities of Iran and the DPRK, as well as the improving American BMD technologies, it is laughable that previous Canadian Prime Ministers would choose to trade a partnership in BMD, and very likely a role in the command and control of that system, for a handful of votes at election time every few years.

This analysis suggests that Canada's decision not to participate in the BMD program was the result of Martin's belief that the U.S. BMD capabilities and the rogue

[125] George MacDonald, "Canada-U.S. Defence Cooperation: Where to From Here? Building on Strengths, Understanding Each Other, Expanding Horizons." *Canadian Military Journal* Vol 6, No. 2, 6.

threat was still quite immature, NORAD's future had already been secured, and that significant trade and foreign relations difficulties would be temporary due to Canada's long, rich history as an ally of the United States. While scholars such as Fergusson, Gillis, and Stannix have suggested that Canada's nonparticipation in the ballistic missile program could be detrimental to Canada in the long term, this view is assessed as short sighted given the significant partnership that Canada has developed with its closest ally. This short sighted view stems from Paul Martin's willingness to trade the prospects for defending the nation against a ballistic missile threat from a future rogue state for a perceived and temporary political advantage, which ended up being minimal. Fortunately, this decision did not have the negative consequences suggested by Fergusson, Stannix, and Gillis. Prime Minister Harper was able to encourage a new and improved NORAD renewal, and a permanent one at that. While foreign relations with the U.S. were temporarily soured, they improved significantly following Harper's election victory, resulting in several successful bilateral initiatives. Finally, any trade penalties suggested by these scholars simply never occurred, as both Canada and the United Stated enjoyed increases in imports and exports over most sectors in the two years following the Martin decision.

It is very likely that Prime Minister Harper, and even his eventual successor, will continue with their efforts to promote non-proliferation, nuclear arms reductions and disarmament, as well as the imposition of the strictest sanctions on irresponsible states of concern. Surely, the critical roles of NORAD will be refined as required, ensuring adequate deterrence against those who would threaten North America. As Lieutenant-General MacDonald has stated multiple times in his work, Canada missed an incredible

opportunity to act as a partner in BMD, at an exceptionally reduced cost. There would be no missile silos, radars, or operations centres on Canadian soil. All that Chrétien or Martin had to do was say "yes, as your NORAD partner and closest ally, we publically support BMD and we'll participate in a modest way." Participating in BMD would have given Canada a seat at the BMD "console," alleviating the inevitable sovereignty and defence concerns that will be voiced once North Korea or Iran develop the capability of a nuclear ICBM strike on North America. Both Iran and North Korea have long stated that they will not willingly give up their nuclear or ICBM development programs. While both states have been offered "sweetheart" deals and had significant international sanctions imposed on them, they remain steadfast in their respective nuclear ambitions.

Barring a pre-emptive strike by the Americans, it is possible that one or both rogue states will develop or obtain a capability that can deliver a nuclear warhead to North America in ten to twenty years. Canada's concern cannot be "can we afford to participate in BMD," but has to be "can we afford to give away our sovereign right to choose how we will defend ourselves against a nuclear armed rogue state?" It is frightening to think that should the DPRK or Iran attempt a nuclear strike against North America, Canadian officials would be locked out of a decision that could affect millions of Canadian lives. The nuclear capability and missile range arguments are convenient today, but they will not be for much longer, especially given the strides that both Iran and the DPRK have made in recent decades.

At this point, however, the United States seems satisfied with the status quo. Their GMD system based at Fort Greely and Vandenberg Air Force Base is deployed and being modified and improved continuously. While the concept of "hitting a bullet with a

bullet" is a nearly impossible feat to achieve from a technological and engineering standpoint, great strides have been made in recent years to improve the likelihood of an ICBM intercept. In addition, the United States likely has at least a decade before a rogue state develops the capability to strike the homeland, which buys them some time to perfect their own technology.

The U.S. also seems satisfied with the NORAD ITW/AA arrangement. Although Canada is not directly participating in BMD, the Martin administration allowed the use of the NORAD ITW/AA data, resulting in less expensive and technical BMD-specific layers for the GMD system. It is doubtful, however, that the United States will publically ask for Canadian support or participation again, due to the extremely embarrassing events of 2004 and 2005. As such, if Prime Minister Harper wants to exercise his sovereign right to assist in an intercept decision during a nuclear strike on North America, the onus will be on him to engage the U.S. President directly with a firm commitment to support and participate, even if only in a limited way. In fact, his success in the 2011 federal election, having secured a majority government, will provide additional political security should he attempt to reopen BMD talks with the United States. Should he decide not to do so, once these states of concern develop their nuclear capabilities, the people of Canada will be protected at the will and convenience of strangers.

BIBLIOGRAPHY

Bali, Ash U. "At the Nuclear Precipice: Iran," in At the Nuclear Precipice: Catastrophe or Transformation, ed. Richard Falk and David Krieger, 97-160. New York: Palgrave MacMillan, 2008.

Battiss, Samir. "Canada and the American National Missile Defence: Still Room for Participation?" *Points de Vue,* September 2007: 1-15.

Bilgin, Pinar. *Regional Security in the Middle East: A Critical Perspective.* London: Rutledge Curzon, 2005.

Bloomfield, Alan and Kim Richard Nossal. "Towards an Explicative Understanding of Strategic Culture: The Cases of Australia and Canada," *Contemporary Security Policy* Vol 28, No. 2 (August 2007): 286-307.

Bridges, Holly. "C17 Training at a Glace." *The Maple Leaf* Vol. 10, No. 6 (27 February 2007): 11.

Burns, Richard Dean and Lester H. Brune. *The Quest for Missile Defenses: 1944-2003.* Claremont: Regina Books, 2003.

Canadian Security Intelligence Service. *Insights into the Future of Iran as a Regional Power*. Ottawa: Canadian Security Intelligence Service, 2009.

Carafano, James Jay, Jena Baker McNeill, Ray Walser and Richard Weitz. "Expand NORAD to Improve Security in North America." *Backgrounder* No. 2443 (July 2010): 1-7.

Carpenter, Ted Galen. *America's Coming War with China: A Collision Course over Taiwan.* New York: Palgrave Macmillan, 2005.

Carter, Ashton B. and David N. Schwartz. *Ballistic Missile Defense.* Washington: The Brookings Institute, 1984.

CBC News. "Canada's Role", last updated 05 August, 2006, available from www.cbc.ca; Internet; accessed 21 April 2012.

CBC News. "Ka-boom or Bust: The U.S. Missile Defence System", last updated 18 August, 2008, available from www.cbc.ca; Internet; accessed 21 April 2012.

Central Intelligence Agency, "Unclassified Report to Congress on the Acquisition of Technology and Advanced Conventional Munitions, 1 January Through 30 June 2003," https://www.cia.gov/ library/ reports/archived-reports-1/jan_jun2003.htm; Internet; accessed 13 August 2011.

Central Intelligence Agency, "Unclassified Report to Congress on the Acquisition of Technology and Advanced Conventional Munitions, 1 July Through 31 December 2003," https://www.cia.gov/ library/reports/archived-reports-1/july_dec2003.htm; Internet; accessed 13 August 2011.

Centre for Military and Strategic Studies. *To Secure a Nation: The Case for a New Defence White Paper.* Calgary, 2001.

Cha, Victor D. "Challenges for North Korea's Nuclear Endgame," in *New Challenges in North Korean Foreign Policy,* ed. Kyung-Ae Park, 185-203. New York: Palgrave MacMillan, 2010.

Cimbala, Stephen J. *Shield of Dreams: Missile Defense and U.S.-Russian Nuclear Strategy.* Annapolis: Naval Institute Press, 2008.

Cohen, Warren I. *America's Response to China: A History of Sino-American Relations.* New York: Columbia University Press, 2010.

Delpech, Therese. *Iran and the Bomb: The Abdication of International Responsibility.* New York: Columbia University Press, 2006.

Department of Foreign Affairs and International Trade. "Global Partnership Program." Online; available from http://www.international.gc.ca/gpp-ppm/global_partnership-partenariat_ mondial.aspx? view=d; Internet; accessed 04 August 2012.

Department of Foreign Affairs and International Trade. "Nuclear Non-Proliferation." Online; available from http://www.international.gc.ca/arms-armes/nuclear-nucleaire/non_prolif.aspx? lang= en&view=d; Internet; accessed 04 August 2012.

Department of Foreign Affairs and International Trade. "Canada and the United States Cooperate to Prevent Nuclear Terrorism." Online news release No. 19, 22 January 2009; available from http://www.international.gc.ca/media/aff/news-communiques/2009/386765.aspx?lang=en& view=d; Internet; accessed 04 August 2012.

Department of Foreign Affairs and International Trade. "Canada Contributes to Multilateral Effort to Prevent Nuclear Terrorism." Online news release No. 83, 28 March 2009; available from http://www.international.gc.ca/media/aff/news-communiques/2009/386988.aspx?lang= en&view=d; Internet; accessed 04 August 2012.

Department of Foreign Affairs and International Trade. "Canada Expresses Concern at North Korean Nuclear Announcement." Online news release No. 101, 15 April

2009; available from iehttp://www.international.gc.ca/media/aff/news-communiques/2009/387062. aspx?lang=en&vw=d; Internet; accessed 04 August 2012.

Department of Foreign Affairs and International Trade. "Canada Concerned by Reports of Nuclear Collaboration between Zimbabwe and Iran." Online news release No. 93, 08 March 2011; available from http://www.international.gc.ca/media/aff/news -communiques/2011/093.aspx ?lang=eng&view=d; Internet; accessed 04 August 2012.

Department of Foreign Affairs and International Trade. "Canada and China Enhance Nuclear Cooperation." Online news release, 19 July 2012; available from http://www.international. gc.ca/media/aff/news-communiques/2012/07/19a. aspx?lang=eng&view=d; Internet; accessed 04 August 2012.

Department of Foreign Affairs and International Trade. "Canada Voices Disappointment at Iran's Decision to Further Enrich Nuclear Material." Online news release No. 59, 08 February 2010; available from http://www.international.gc.ca/media/aff/ newscommuniques/ 2010/059.aspx?lang=eng&view=d; Internet; accessed 04 August 2012.

Department of Foreign Affairs and International Trade. "Canada Welcomes New U.S.-Russian Strategic Arms Reduction Treaty." Online news release No. 117, 26 March 2010; available from http://www.international.gc.ca/media/aff/news-communiques/2010/117.aspx?view=d; Internet; accessed 04 August 2012.

Department of Foreign Affairs and International Trade. "Statement by Minister Canon on Iran's Uranium Enrichment Claim." Online news release No. 132, 09 April 2010; available from http:// www.international.gc.ca/media/aff/news-communiques/2010/132.aspx?lang=eng&view=d; Internet; accessed 05 August 2012.

Department of National Defence. *Department of National Defence Space Policy.* DND, 1998.

Dorn, Walter. "Canada's Position on Ballistic Missile Defence." Toronto: Canadian Pugwash Group Workshop, 2000.

Duric Mira. *The Strategic Defence Initiative: U.S. Policy and the Soviet Union.* Hampshire: Ashgate Publishing Limited, 2003.

Dyment, David. *Doing the Continental: A New Canadian-American Relationship.* Toronto: Dundurn Press, 2010.

El Bardadei, Mohamed. "Preventing Nuclear Catastrophe: Where Do We Go From Here?" in *At the Nuclear Precipice: Catastrophe or Transformation, ed.* Richard Falk and David Krieger, 209-213. New York: Palgrave MacMillan, 2008.

Eshel, David. "BMD in the Gulf," *Military Technology* (February 2009): 27-31.

Fedorov, Yury. "American Ballistic Missile Defence, Russian Iskanders and a New Missile Crisis in Europe", REP Roundtable summary. London: Chatham House, 2009.

Fergusson, James. *Beneath the Radar: Change and Transformation in the Canada-U.S. North American Defence Relationship.* Report Prepared for the Canadian Defence and Foreign Affairs Institute. Calgary: Canadian Defence and Foreign Affairs Institute, 2009.

Fergusson, James. *Canada and Ballistic Missile Defence - 1954-2009: Déjà Vu All Over Again.* Vancouver: UBC Press, 2010.

Fergusson, James. *Canadian Defence and the Canada-U.S. Strategic Partnership: The Aerospace Dimension*. Report Prepared for the Canadian Defence and Foreign Affairs Institute. Calgary: Canadian Defence and Foreign Affairs Institute, 2002.

Fergusson, James. *Déjà vu: Canada, NORAD, and Ballistic Missile Defence.* Winnipeg: Centre for Defence and Security Studies, 2000.

Fergusson, James. "Shall We Dance? The Missile Defence Decision, NORAD Renewal, and the Future of Canada-U.S. Defence Relations", *Canadian Military Journal* Vol 8, No. 2 (Summer 2005): 13-22.

Fergusson, James. "Thinking About a 'Known Unknown'", *International Journal* 63, No. 4 (Autumn 2008): 823-845.

Fuqua, Jacques L. *Nuclear Endgame: The Need for Engagement with North Korea.* Westport: Praeger Security International, 2007.

Garrett, Joseph G. and Peter Franklin. "A Case for Global Ballistic Missile Defence," *Military Technology* (August 2007): 41-43.

Gillespie, Paul G. and Grant T. Weller. *Harnessing the Heavens: National Defense Through Space.* Chicago: Imprint Publications, 2008.

Gillis, L.G. "Canada and U.S. Missile Defence: The Case for Participation in, and the Case Against, Space Weaponization." Toronto: Canadian Forces College Paper, 2004.

Godefroy, Andrew. *Canada's International Policy Statement Five Years Later*. Report Prepared for the Canadian Defence and Foreign Affairs Institute. Calgary: Canadian Defence and Foreign Affairs Institute, 2010.

Godefroy, Andrew. *Projecting Power: Canada's Air Force 2035*. Report Prepared for the Department of National Defence. Trenton: Canadian Forces Aerospace Warfare Centre, 2009.

Goure, Daniel. "One Future for Missile Defence", *Congressional Missile Defence Conference*. Arlington: The Lexington Institute, 2008.

Government of Canada. "Defence and Security Cooperation." Online, available from http://www.canadainternational.gc.ca/ca-am/bilat_can/sec_pol.aspx?lang=eng&menu_id=147&view=d; Internet, accessed 05 August 2012.

Government of Canada. *Framework Agreement between the Government of Canada and the Government of the United States of America for Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes.* Government of Canada, 2008.

Handberg, Roger. *Ballistic Missile Defense and the Future of American Security: Agendas, Perceptions, Technology, and Policy.* Westport: Praeger Publishers, 2002.

Handberg, Roger. *Seeking New World Vistas: The Militarization of Space.* Westport: Praeger Publishers, 2000.

Hecker, Siegfried S. "Lessons Learned from the North Korean Nuclear Crisis," in *The Survival of North Korea: Essays on Strategy, Economics, and International Relations,* ed. Suk Hi Kim, Terence Roehrig and Bernhard Seliger, 214-229. Jefferson: McFarland & Company Publishers, 2011.

Hildreth, Steven. *Current Debate on Missile Defense*. Hauppaugge: Nova Science Publishers, Inc, 2004.

Hitchens, Theresa. "The Perfect Storm: International Reaction to the Bush National Space Policy." *High Frontier Journal* 3, no. 2 (March 2007): 19-24.

Hunter, Shireen T. *Iran's Foreign Policy in the post-Soviet Era: Resisting the New International Order*. Santa Barbara: Praeger, 2010.

Hurtig, Mel. *Rushing to Armageddon: The Shocking Truth About Canada, Missile Defence, and Star Wars.* Toronto: McClelland & Stewart Ltd, 2004.

Hynek, Nik. "Missile Defence Discourses and Practices in Relevant Modalities of 21st-Century Deterrence," *Security Dialogue* Vol 41, No. 4 (August 2010): 435-459.

International Atomic Energy Agency. "IAEA Board Adopts Resolution on Iran." Online, available from http://www.iaea.org/newscenter/news/2011/iran-resolution.html; internet, accessed 13 August 2012.

Jockel, Joseph T. *Canada in NORAD – 1957-2007: A History.* Montreal: McGill-Queen's University Press, 2007.

Jockel, Joseph T. "Five Lessons from the History of North American Aerospace Defence." *International Journal* 65, No. 4 (Autumn 2010): 1017-1023.

Jockel, Joseph T. "Saving NORAD: Should Ottawa Seize the Obama Moment?" *SPP Briefing Papers*. Calgary: University of Calgary School of Public Policy, 2009.

Joo, Seung-Ho and Tae-Hwan Kwak. *North Korea's Second Nuclear Crisis and Northeast Asian Security.* Burlington: Ashgate Publishing, 2007.

Kaplan, Fred. "What's Obama's Nuclear Endgame?" Online, available from http://www.slate.com/articles/news_and_politics/war_stories/2012/03/the_future_of_nuclear_missile_defense_president_barack_obama_told_dmitri_medvedev_that_he_will_have_more_flexibility_after_he_is_reelected_.html; Internet, accessed 10 August 2012.

Kim, Suk Hi and Bernhard J. Seliger. "U.S. Policy Options on a Nuclear North Korea," in *The Survival of North Korea: Essays on Strategy, Economics, and International Relations,* ed. Suk Hi Kim, Terence Roehrig and Bernhard Seliger, 245-255. Jefferson: McFarland & Company Publishers, 2011.

Kirby, William C., Robert S. Ross, and Gong Li. *Normalization of U.S.-China Relations: An International History.* Cambridge: Harvard University Press, 2005.

Korea Research Institute for Strategy. *The Strategic Balance in Northeast Asia.* Seoul, 2010.

Lagasse, Philippe. "Canada, Strategic Defence, and Strategic Stability." *International Journal* 63, No. 4 (Autumn 2008): 917-937.

Lambakis, Steven. "Leveraging Space to Improve Missile Defense." *High Frontier Journal* 3, no. 2 (March 2007): 25-29.

Lakos, Michael. "How Can the Space Medium be Further Exploited to Counter Terrorism." *High Frontier Journal* 3, no. 2 (March 2007): 30-36.

Lennon, Alexander T. J. *Contemporary Nuclear Debates: Missile Defense, Arms Control and Arms Races in the Twenty-First Century.* Cambridge: The MIT Press, 2002.

Lindsey, George R. and F. Ronald Cleminson. *Canada, Outer Space and Ballistic Missile Defence*. Ottawa: Rundle Virtual Research Group, 2001.

MacKenzie, Fraser A. F. "Should Canada Re-Examine its Position on Missile Defence?", *Canadian Military Journal* Vol 9, No. 2: 102-110.

MacDonald, George. "Canada-U.S. Defence Cooperation: Where to From Here? Building on Strengths, Understanding Each Other, Expanding Horizons." *Canadian Military Journal* Vol 6, No. 2: 5-11.

Mader, George. "Assessing the Iranian Missile Threat," *Military Technology* (November 2009): 36-37.

McDonough, David S. "BMD and U.S. Strategic Doctrine: Canadian Strategic Interests in the Debate on Missile Defence.", *Journal of Military and Strategic Studies* Vol 9, No. 3 (Spring 2007): 1-41.

Mantle, Peter J. *The Missile Defense Equation: Factors for Decision Making.* Reston: American Institute of Aeronautics and Astronautics, Inc, 2004.

NATO Media Fact Sheet, *NATO Active Layered Theatre Ballistic Missile Defence (ALTBMD)*, August 2011.

Nadeau, Marc, Simon Prefontaine, and Lili Mei. *A Profile of Canadian Exporters*, Canadian Trade Review, 2010.

Nadeau, Marc, Simon Prefontaine, and Lili Mei. *A Profile of Canadian Importers*, Canadian Trade Review, 2010.

Nossal, Kim Richard, Stephane Roussel and Stephane Paquin. *International Policy and Politics in Canada.* Toronto: Pearson Canada Inc, 2011.

Office of Technology Assessment. *Strategic Defenses: Ballistic Missile Defense Technologies, Anti-Satellite Weapons, Countermeasures, and Arms Control.* Princeton: Princeton University Press, 1986.

Oppenheimer, Andy. "Missile Defense Status," *Military Technology* (August 2011): 35-42.

O'Neal, Andrew. *Nuclear Proliferation in Northeast Asia: The Quest for Security.* New York: Palgrave MacMillan, 2007.

Peoples, Columba. *Justifying Ballistic Missile Defence: Technology, Security and Culture.* Cambridge: Cambridge University Press, 2010.

Prime Minister's Office. "PM Announces Expanded Cooperation with the United States to Secure Inventories of Highly Enriched Uranium." Online news release, 27 March 2012, available from http://pm.gc.ca/eng/media.asp?category=1&featureId=6&pageId=26&id=4718; Internet; accessed 05 August 2012.

Quartieri, Andrea. *Moscow's Iran Policy and the Nuclear Question: Linking Domestic Decision-Making and Russian-U.S. Relations.* Saarbrucken: VDM Verlag Dr. Muller Aktiengesellschaft & Co, 2010.

Regehr, Ernie. *Canada and Ballistic Missile Defence.* Waterloo: Project Ploughshares, 2003.

Renuart, Jr, Victor E. "The Enduring Value of NORAD," *Joint Force Quarterly* Vol 54 (3rd Quarter 2009): 92-96.

Rosman, Gilbert. *Strategic Thinking About the Korean Nuclear Crisis.* New York: Palgrave Macmillan, 2007.

Rudd, David, Jim Hanson and Jessica Blitt. *Canada and Missile Defence.* The Canadian Institute of Strategic Studies, 2000.

Rusten, Lynn F. "U.S. Withdraws from the Antiballistic Missile Treaty." *Center for the Study of Weapons of Mass Destruction Case Study 2*. Washington: National Defense University Press, 2010.

Ryan, Kevin. "Preventing the Unthinkable." *The Journal of International Security Affairs*, No. 20 (Spring/Summer 2011); http://www.securityaffairs.org/issues/2011/20/ryan.php; Internet; accessed 11 July 2012.

Samson, Victoria. *American Missile Defense: A Guide to the Issues.* Santa Barbara: Praeger, 2010.

Sloan, Elinor. "U.S.-China Military and Security Developments." *International Journal* 66, No. 2 (Spring 2011): 265-283.

Sokolsky, Joel J. "A Seat at the Table: Canada and its Alliances." *Armed Forces and Society* Vol. 16, No. 1 (Fall 1980): 11-35.

Spinardi, Graham. "Ballistic Missile Defence and the Politics of Testing: The Case for the U.S. Ground-Based Midcourse Defence," *Science and Public Polity* Vol 35, No. 10 (December 2008): 703-715.

Stannix, Ken. "Should Canada Participate in the United States National Missile Defence System?" Toronto: Canadian Forces College Paper, 2002.

Staples, Steven. *Missile Defence: Round One.* Toronto: James Lorimer & Company Ltd, 2006.

Stav, Arieh. *The Threat of Ballistic Missiles in the Middle East.* Brighton: Sussex Academic Press, 2004.

Stephenson, Alan. *Securing the Continent: Where is NORAD Today,* Strategic Studies Working Group Papers. Calgary: Canadian Defence and Foreign Affairs Institute, 2011.

Swaine, Michael D, *et al*. *Assessing the Threat: The Chinese Military and Taiwan's Security.* Washington: Carnegie Endowment for International Peace, 2007.

Swaine, Michael D, Zhang Tuosheng, and Danielle F.S. Cohen. *Managing Sino-American Crises: Case Studies and Analysis.* Washington: Carnegie Endowment for International Peace, 2006.

Terstegge, Stephen D. "Ballistic Missile Defense in the European Theatre: Political, Military and Technical Considerations." Newport: Naval War College Paper, 2007.

Tomlin, Brian W., Norman Hillmer and Fen Osler Hampson. *Canada's International Policies: Agendas, Alternatives, and Politics.* Don Mills: Oxford University Press, 2008.

Tsunekawa, Jun. *The Rise of China: Responses From Southeast Asia and Japan.* Nakameguro: The National Institute for Defense Studies, 2009.

Yanarella, Ernest J. *The Missile Defense Controversy: Technology in Search of a Mission.* Lexington: The University Press of Kentucky, 2002.