

THE REBIRTH OF NORTH AMERICAN AIR DEFENCE

By

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*A Thesis
Submitted To The Faculty Of Graduate Studies
In Partial Fulfillment Of The Requirements
For The Degree Of*

Master Of Arts

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Winnipeg, Manitoba*

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ISBN 0-315-92130-7

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A Thesis submitted to the Faculty of Graduate Studies of the University of Manitoba in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

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ACKNOWLEDGMENTS

In no particular order, I wish to thank the following people for their contribution to this work: Professor Jim Ferguson for his time, patience, knowledge, resource materials and editing suggestions and Professor Paul Buteux for his time, patience, knowledge, and resource materials. This work owes a lot to all the men and women of the Public Affairs Office at Air Command in Winnipeg who answered my questions and provided leads which often turned up interesting and valuable information. In particular, I would like to thank J.M.D. Henrie, DND Coordinator - Access To Information, Lieutenant-Commander S. Jones, and A. Lamalice, Director - Communications, Policy, Evaluation, Planning, all at National Defence Headquarters for providing the data without which this work would not have been possible. Similarly, I wish to thank Colonel James P. Moore, NORAD Director of Public Affairs and Herbert M. Zolot, NORAD Command Historian for providing staffing and funding data without which this work would not have been possible.

*Nick N. Blazanovic
July 11, 1994*

INTRODUCTION

Canada and the United States share a multitude of common interests from which a number of defence agreements have arisen. When it comes to national security needs, both countries have found it mutually beneficial to collaborate. Both nations have discovered that it is necessary and desirable to approach national security problems from a continentalist perspective. NORAD [the North American Aerospace Defence Command] is a product of this continentalist approach.

The relationship between Canada and the United States under the NORAD agreement has been called into question for several reasons. Most of the criticism centres around the fact that Canada does not have an equal voice in this relationship. Due to a much weaker military capability in relation to the United States, Canada is definitely in the position of the junior partner. In particular, critics question the extent of Canadian control and influence over the direction of United States policy when Canadian interests are directly affected. The answer most often given by these critics is very little or none at all. As a result, they feel that Canada would be best served by withdrawing from NORAD.

The opposing view is that it is much better to be a junior partner, than to be excluded entirely. It is true that the United States could not tolerate a threat to Canada and Canadian security, and would act to defend Canada regardless of Canadian participation in NORAD. After all, the United States retaliatory capability provides a deterrence umbrella for Canada and it would

be possible for Canada to reap the security dividend that is derived by virtue of being located next to the United States. Nonetheless, Canadian participation in NORAD also serves as a window on the activities of the United States and forecloses the possibility of the United States acting unilaterally without Canadian approval or knowledge. Canadian defence capability is also limited by the prohibitive cost of covering a significant expanse of territory. As Canadian security interests are very similar to United States security interests it is evident that Canada can derive additional security from participating in a complementary role to that of the United States rather than trying to do the job alone.

As a result of the deterrence umbrella which Canada benefits from simply by virtue of geographical location and the greater resources which the United States has to draw upon, Canadian defence policy has lapsed into an excessive reliance on the United States. As a result, the bulk of the funding for NORAD comes from the United States and Canada has been getting by with a minimum amount of expenditure. In order to gain equal voice in a partnership, it is usually expected that both partners contribute equally to the overall effort. Put another way, if you want to be part of the club, you have to pay your dues.

It has always been apparent that the United States could never tolerate any attack on North America by a hostile power. An attack on any portion of the North American continent would be perceived as an attack on United States interests and result in

retaliation. Given that this maxim has been well understood in Ottawa, Canadian participation in NORAD has been characterized as a token gesture. The financial contribution Canada makes to NORAD is fairly insignificant and is often cited by critics as an example of Canada taking a free ride. Since the percentage share of the financing of any endeavor is directly proportional to the amount of influence that exists in a partnership, it can be assumed that taking on a greater responsibility for the funding of NORAD would increase Canadian influence in the relationship.

It is often stated that budgeting is more indicative of policy than pronouncements made in speeches. The arrival of Brian Mulroney on the political scene in Canada was heralded by many pronouncements regarding the inadequacy of the previous Liberal government's efforts in the area of defence policy. The newly elected Prime Minister had promised to increase defence funding so that Canada would contribute fairly to the various alliances that the nation is a member of. As a result, the arrival of Brian Mulroney on the Canadian political scene created an air of expectation that the rhetoric regarding the revitalization of Canadian defence and foreign policies would translate into additional funds and resources to meet Canadian obligations. These expectations do not appear to have been met. Jockel and Sokolsky in Canada and Collective Security have stated that the only difference between the Mulroney Government and its predecessor has been in the rhetoric employed. Since NORAD is a fairly obvious example of a bilateral defence relationship which

ought to have experienced increased levels of funding and manpower, it lends itself readily to an examination of whether or not the pronouncements made by the former Prime Minister were merely rhetoric or whether they really did signal a shift in Canadian defence and foreign policy. An increase in the funding and manpower allocated to NORAD after the election of Brian Mulroney would tend to disprove that statement while no change or a decrease in funding and staffing levels should substantiate it.

Under ideal circumstances, if the burden is apportioned equally, funding data for NORAD should reveal that each country contributes approximately 50% of the annual budget. However there has to be some recognition of the fact that Canada does not have the same resources and ability to contribute as does the United States. In most instances where NORAD is concerned, the Canadian and American governments have agreed on dividing major capital expenditures by apportioning 1/3 to Canada and 2/3 to the United States. The NORAD annual operating budget should show an even more generous division of costs. In recognition of the smaller population and the comparatively weaker economic might of Canada, the United States has traditionally provided 90% of the NORAD annual budget. If the pronouncements regarding the revitalization of air defence by Brian Mulroney have been translated into action vis-a-vis the funds and manpower allocated to accomplish this goal, the funding and staffing data should show an increase in Canadian contributions. Furthermore, the data should show an increase in the Canadian share of the total NORAD

budget after 1984 as that was the year that Brian Mulroney came to power.

By examining how much was spent on NORAD from 1980 to 1991, it should be possible to get a better idea of whether the Mulroney government's record lives up to the promise of picking up a greater share of the defence burden. This time period is significant in that the late 1970s and early 1980s mark a period in history where interest in continental air defences was renewed in both Canada and the United States. Furthermore, this time period is significant in that it offers a glimpse of what the preceding administration contributed to NORAD in contrast to what the Canadian contribution has been under the Mulroney Government.

The first chapter will look at the case for and against Canadian participation in NORAD. It is somewhat surprising to see that many of these arguments have not changed over time even as political, strategic, and technological considerations have changed. In a very real sense, the debate over Canadian participation in NORAD is simply part and parcel of the larger debate over excessive reliance and entanglement with the United States in general. Similarly, it can also be viewed within the context of the continuing debate over the definition of the Canadian role in the international arena.

Chapter Two will look at formation of NORAD and its evolution up to 1980. This block of time is significant in that it is indicative of how the relationship came into being and how it has since evolved. It demonstrates that NORAD came into being as a

result of security concerns which provided the impetus for action at the political level between Canada and the United States. The present situation can best be understood by examining the past. Many of the same factors which were relevant at the time NORAD was created are still present today. Furthermore, NORAD's history consistently demonstrates a funding breakdown of 2/3 apportioned to the United States and 1/3 to Canada where capital expenditures are concerned. As this has been the historical formula, any departure from this formula during Mulroney's governance would be indicative of whether or not additional resources were made available to revitalize North American air defences. More significantly, the historical record reveals that NORAD is an issue at the political level in Canada whereas it is a non-issue in the United States.

Chapter Three will deal with the modern era. The late 1970s through to the present are a distinct block of time as far as NORAD and air defence are concerned. This particular period is marked by the rebirth of air defence as an issue in national security discussions in both Canada and the United States. Furthermore, it is a period which is marked by the transformation of NORAD into its present form, which was accompanied by the modernization of the radar network as part of NORAD's data acquisition capabilities. Additionally, it is punctuated by the election of the Mulroney government which promised to transform Canadian foreign and defence policy.

Chapter Four will present data relating to the funding and

staffing of NORAD throughout the 1980s up to 1991. This chapter will attempt to examine whether or not the pronouncements made by Prime Minister Mulroney regarding NORAD and accepting a greater share of the burden were translated into action. The data indicates a mixed result at best. While a greater share of the costs was assumed in the construction of the North Warning System which replaced the obsolete DEW line, it appears that funding for NORAD actually decreased in proportion to the United States outlay. Furthermore, the Canadian annual contribution to NORAD operations fell short of the 10% share which has historically been accepted as the amount apportioned to Canada.

The data reveals that Canadian funding of NORAD subsequent to the election of Brian Mulroney did not differ markedly from that of his immediate predecessors. In fact, Canada's percentage share of NORAD funding decreased under the Mulroney government. This tends to support the position taken by Jockel and Sokolsky that the only difference between the outgoing Liberal government and the Conservative government was the rhetoric employed.

Canadian membership in NORAD is extremely attractive. As the data shows, Canada does not fund NORAD in proportion to the traditional 90% to 10% apportionment. In the construction of the radar network, Canada has been responsible for only 30% of the expenditure. Although Canada assumed a greater share in funding the North Warning System, the United States assumed the greater share of the burden in that instance as well. These are very generous terms considering that Canadian security and sovereignty

are enhanced through participation in NORAD. In fact, it can be argued that the United States has paid to safeguard Canadian sovereignty in the Arctic through the construction of the Distant Early Warning (DEW) Line of radars and more recently with the construction of the North Warning System (NWS). Canadian sovereignty is enhanced by participating in NORAD. Moreover, Canada avoids the embarrassment of forcing the United States to act unilaterally to protect North America even if Canadian participation is little more than a token gesture.

The historical evolution of the relationship reveals that the issue is important at the political level in Canada whereas it is a non-issue in the United States. From the political wrangling exhibited over NORAD and other defence related issues in Canada, it appears that defence and foreign policy are easily exploitable issues which opposition parties exploit to maximum effect. It is quite interesting to see that NORAD becomes a political issue at every renewal and is hardly discussed or debated otherwise. The rhetorical excesses in support of Canadian participation in NORAD or similar pronouncements denigrating the need for Canadian participation in NORAD obscure the singular fact that Canada has been able to take advantage of the situation. In essence, Canada has been able to take a free ride as a result of American willingness to pay for NORAD. As such, Canada has been able to exploit the situation and get the United States to pay for a radar network which enhances Canadian sovereignty. Canada has also been able to get access to information which it would

ordinarily not have access to because of NORAD. Canadian participation in NORAD is ensured as the terms are extremely attractive and the cost of doing the job alone would be significantly greater.

THE CASE FOR AND AGAINST NORAD

Chapter 1

Many of the difficulties which exist in the NORAD relationship are a function of the fact that Canada is still trying to determine if participation in NORAD is a logical and worthwhile pursuit. The various arguments regarding Canadian participation in NORAD are still being debated. This ongoing debate seems to subside, only to gain momentum around the time of each subsequent renewal of the NORAD agreement.

In relation to the size of its territory, the population of Canada is quite small. The United States which covers a land mass smaller than Canada contains a significantly larger population. To further complicate matters, the population of Canada is highly concentrated in urban areas which themselves are located in close proximity to the Canada - United States border. Much of the territory is therefore sparsely populated. With a small population base there also comes a limited taxation base. Never having aspired to military supremacy, Canada has relied upon other nations and alliances to meet her security needs. As a result of these combined factors, the relative amount of economic, military, and political clout which Canada can project is disproportionate when contrasted to that of the United States.

Although the principle of the sovereign equality of states exists in theory, it is clear that in practice this principle is often discounted. This reality has been evident for quite some time now to Canadian External Affairs officials. "What they discovered once more was the hard facts of power: that the theoretical equality of sovereign nations was a theory only, and

that a country of twelve, or twenty, millions of people did not carry much weight in the councils of the world...it came in the end to the same thing, and that was very little."¹ It is unlikely that this situation will be reversed. For Canadians this has meant acceptance of the reality that the United States will continue to dominate both continental as well as global issues. As a result, many Canadian policies are formulated in response to American policy. This state of affairs is frequently not apparent because Canadian and American interests are usually very similar. Furthermore, both countries share similar security concerns. The primary element which ensured that Canadian and American interests were on the same plane was a common enemy in the form of the former Soviet Union. So long as this convergence of views and interests existed, there was little friction in this sphere between the two countries. However, problems arise in situations where views and goals do not converge. It is this circumstance which gives rise to Canadian fears over encroachment upon Canadian sovereignty.

THE CASE FOR AND AGAINST CANADIAN PARTICIPATION IN NORAD

Sovereignty is a principle that posits that a nation has complete and inviolable control over its territory with the ability to act freely as an equal in the international community. The preceding definition could only apply if nations existed in a vacuum without any need for interaction with other nations.

"To argue in this way is to associate the attribute of sovereignty with the possession by the state of freedom to act as it chooses instead of with the absence over and above the state of a superior authority. To do that is to confuse the situation to which states may often have aspired, but have never in fact enjoyed, with the opposite condition from which the concept of sovereignty in its international version historically obtained its relevance and from which it continues to derive it - that condition in which a collection of states, all insisting on their independence, were brought to recognize that they do not exist in isolation but are forced to live with other states."2

If one accepts this broader definition which implies that nations are interdependent and must interact, it is more appropriate to accept that while all nations are sovereign, circumstances may restrict their freedom to act. If the reality of restrictions on a nations freedom to act are accepted, the evolution of Canadian - American relations can be placed within that context. Both nations must interact and cooperate to achieve mutually desirable goals.

As sovereignty is a result of the ability to project authority over territory, it is usually derived through the exercise of control over that territory and/or through a set of accepted conventions between nations. The exercise of authority is complicated when limited resources, a relatively huge land mass, low population base, inhospitable climate, and the inaccessible nature of the terrain are factored in. Unfortunately all of these factors are present in the case of Canada. The prohibitive costs of defending the territory are compounded by the actual technological challenge of doing so. While aerospace

defence is not an issues separate from overall strategic considerations, it does pose a unique set of challenges. One cannot erect a border to keep unwanted airborne intruders from penetrating airspace which falls under a particular national jurisdiction. Similarly, national boundaries are problematic in that a transgression of airspace can quickly pass between many different national jurisdictions. In order to deal with the unique demands that aircraft exact, it is necessary to give the respective air services the authority to continue their pursuit of a hostile aircraft once it has crossed over into another country. The easiest solution is to combine efforts and make provisions to allow for the various situations which may arise. Therefore, it is not a great surprise that Canada has entered into a multitude of defence arrangements with the United States to deal with security needs which have a bilateral or continentalist dimension to them.

The formation of NORAD illustrates the obvious interdependence of Canada and the United States when it comes to defence. It has been recognized that the defence of the United States and Canada is best handled on a continental basis due to the nature of the threats facing the North American continent as well as due to the physical size of the territory in question. Furthermore, the location of the present radar systems and the basing of other defensive systems which have been proposed all require Canadian participation and territory. The desirability of working together with the United States in order to provide a

complete continental defence is even more attractive when the advantages of cost sharing are factored into the equation. In most of the shared defence ventures between the two nations, the United States has assumed the majority of the costs. Canadian contributions to continental defence have been relatively low.

Nevertheless, any nation which derives the bulk of its defence through the assistance of another nation may be placing itself in a difficult and untenable position. If it is possible to gain control over a particular piece of territory then, it is also possible to lose it. Sovereignty may only be a principle, but, if not maintained through the exercise of appropriate control over territory, it can be lost. In the case of Canada and the United States, Canadian sovereignty has been maintained through the exercise of authority by Canada and by convention. Various agreements which exist between Canada and the United States respecting Canadian authority, as evidenced during the construction of the DEW Line, are a clear indication that Canadians have been, and continue to be sensitive to any encroachment on Canadian sovereignty. In particular, the situation was exacerbated by Canadian sensitivity to the claim over the Northern reaches of Canadian territory. Canadian concerns over encroachment have been addressed time and time again. In fact, the United States has often made special effort to allay these fears before they have a chance to blossom. Examples of this can be found if one looks at the special provisions placed in the agreements outlining the construction of

the various radar networks. (The most recent example of this can be seen in Appendix G). Part of the provisions for the construction of the DEW Line specified that, in deference to Canadian concerns, indigenous residents, their culture, and the general physical environment where construction was to take place were not to be disturbed or destroyed.

As far as Canadian defence policy is concerned, there are many reasons which make it difficult for Canada to terminate the special relationship which exists between Canada and the United States. Geographic, historical, and economic realities combine with strategic necessity to bind Canadian interests to those of the United States. As part of the Canadian White Paper on Defence issued in 1964, the following statement echoed this sentiment. "It is, for the foreseeable future, impossible to conceive of any significant external threat to Canada which is not also a threat to North America as a whole. It is equally inconceivable that, in resisting clear and unequivocal aggression against Canadian territory, Canada could not rely on the active support of the United States."³ No matter how much it may annoy or irritate some Canadians, Canadian defence policy will continue to be tied to that of the United States. There really is no reason for it to be otherwise so long as the goals and needs of both countries are mutually compatible.

Realizing that something is true and accepting the fact that it is true are separate things, however. While Canadian participation in NORAD is an issue for debate in Canada, NORAD is

hardly thought of in the United States. It is also typical to find a multitude of articles, documents, and books written about NORAD from the Canadian perspective, whereas similar sources from the United States are notable by their absence.⁴

The issue of Canadian participation in NORAD will not go away. It continues to simmer and comes to a boil at every renewal of the agreement. The argument against Canadian participation in NORAD heard most often throughout the 1980s usually contained the following elements: "Through, NORAD, Canada sacrifices the capacity to pursue a fully independent course. Through NORAD, Canada sacrifices the ability to influence fully other nations by an independence from the United States. Through NORAD, Canada commits itself as the one sure battleground in a nuclear-age exchange between the powers that face each other across her land."⁵

While there was some truth to these statements, most of them are debatable. Canada, much like any other nation, cannot pursue a fully independent course. Having already resolved that the freedom to act is limited in any event, the ability of Canada to act independently is significantly hampered by geographical location alone. As this singular fact is unchangeable, debating Canadian independence is actually an exercise in defining the limits of freedom.

As for Canada's ability to influence other nations, interdependence on a number of fronts between Canada and the United States serves to erode perceptions of Canadian

independence to the point where Canadians are frequently regarded as Americans. Short of digging a moat to separate the two nations, there is little Canadians can do to persuade the rest of the world against this false perception. The similarities in culture and language between the two nations have produced an external view of Canadians as Americans.

An alternate view holds that, because of the special relationship which exists between Ottawa and Washington, and as a result of extensive Canadian involvement in the United Nations and in United Nations peacekeeping missions, Canada is well suited to act as an intermediary between the developing world and the other developed nations. "Indeed, one of the reasons why Communists and non-aligned countries have been interested in Canada is the assumption that it combines relative objectivity with exceptionally easy access to the centre of power in the Western camp."⁶ As a result, Canada gains an extra measure of influence in the international arena as other nations will often encourage Canada to exercise its influence with Washington in order to moderate and affect American actions.⁷ Furthermore, Canadian membership in NORAD is merely a contributing factor to the perception that Canada has a special relationship with the United States. In the final analysis, perceptions of Canadian independence are neither helped nor hampered by Canadian participation in NORAD.

Nevertheless, the partnership which exists between Canada and the United States has worked well in practice. NORAD exemplifies

the ability of both countries to solve common defence needs through bilateral cooperation. The range of Canadian - American cooperation in defence matters is quite extensive. As a result of the multitude of links which exist between the two nations, a certain amount of definitional confusion has resulted.

"This definitional confusion is understandable given the hosts of ad hoc Canada - U.S. governmental meetings which at times seem to shade into formal organizations. Moreover, there is a variety of subcommittees and working groups of bilateral organizations that seem to have an independent existence; in fact, some of the existing bilateral organizations have as their origins such a subcommittee status. The variable levels of activity of the various bilateral organizations also present difficulties, for although some of the organizations have not met for a decade or two, they have never been officially disbanded."^a

Given this set of circumstances, it is best to define bilateral organizations as having a defined membership consisting of members from both sides, a defined statement of purpose, and anticipated ongoing meetings. As a major component of continental defence, NORAD meets these criteria. It should be noted that NORAD is far from being the only bilateral organization which is involved in the defence of North America. There are also six bilateral defence committees between Canada and the United States: the Permanent Joint Board on Defence (PJBD), the Military Cooperation Committee (MCC), the Regional Planning Group of NATO (RPG), the Ministerial Committee on Joint Defence, the Civil Emergency Planning Committee, and the Senior Committee on Defence Production / Development Sharing Program.⁹ The number of

committees along with the areas of jurisdiction each committee presides over is an indication of the intertwined nature of Canadian defence matters with those of the United States on a number of different levels.

While things have worked well in practice, it is apparent that any issue related to continental defence will continue to grate on the conscience of Canadian politicians who see NORAD as an issue which is easily exploitable. Clearly, this is self evident as the issue of Canadian participation in NORAD should have been resolved by now instead of becoming a topic for debate and controversy in Canada at each and every renewal of the NORAD agreement. Since its inception in 1957, NORAD has been an issue in Canadian defence policy. It would seem that for Canadians thirty four years is not nearly enough time to settle the issue. Even though both Liberal or Conservative governments have been in power during the various NORAD renewals, the opposition to the government of the day has never failed to exploit the issue. Perhaps this is some sort of indication that opposition parties are willing to exploit issues to their benefit regardless of where they stood on those same issues when they were in power. After all, NORAD was promptly disowned by the Liberal party even though they were responsible for the negotiations which brought NORAD into being.

There is also a contributing influence from a vocal left in Canada which tends to oppose all things military and especially so when they are linked to the United States. In some sense, a

sizeable segment of Canadian society tends to be insular and desires to avoid entanglements of any sort. Isolationist tendencies have failed to disappear even though the present day technological revolution makes such isolationism impracticable. While NORAD continues to be an issue on the Canadian political scene, most Americans would be hard pressed to identify NORAD.

Arguments favoring the abandonment of NORAD and those favoring the renewal of the agreement stem from particular views that are taken regarding the general direction of Canadian foreign policy. Those favoring a power broker/peacemaker role for Canada generally view NORAD as a hindrance to Canada carrying out this role in the international community.¹⁰ It is assumed that by expanding Canada's role as peacemaker and provider of copious quantities of foreign aid, other nations will realize that Canada is a wonderful and selfless nation whose good will and largess ought to be repaid in kind. This supposition is at best only partially true.

Evil deeds are long reviled and remembered. The good things any individual or nation commits are quickly forgotten. As Eayrs points out: "A Schweitzer or a Gandhi may impress mankind with his capacity for courage and selfless service; but the motives of government are always suspect, and properly so. A nation sacrificing short-term interests in the hope of storing up credit for the long run is likely to suffer serious disappointment."¹¹ Expecting a payback for any action no matter how selfless is not a reliable or expedient way to conduct foreign policy. As such,

it is inconceivable that any nation should base its entire foreign policy on the distribution of largesse.

The other assumption held quite wrongly is that should Canada become detached from its alliances, it would be capable of being the moral conscience of the world, free to mediate disputes and sort out the ills of the world. There is no argument so compelling as one which places oneself as being somehow morally superior and capable of rendering judgement upon others. Of course, any nation holding itself in such high esteem would quickly find out that its advice and aid could be interpreted as unwarranted and undesirable interference. "Those hearing the call are notoriously reluctant to undertake a critical assessment of their qualifications; but in an undertaking of this kind it is well to take an honest reckoning, for (as has been wisely remarked) nothing is more fatal to the success of foreign policy than an over estimate of one's own national power."¹² In an era where Canadian domestic concerns are taking precedence over issues of an international nature, it is unlikely that Canada could seriously embark on such a course. Former rivals such as Japan and Germany are better positioned in this regard. Canada has been overtaken by economic difficulties which would make it difficult to embark on this particular course of action. Similarly, Canada has never been a great military power nor has there ever been a desire to become one. As such, the amount of economic or military leverage that could be exercised by Canada would not amount to much.

Finally, it is assumed that by removing Canada from the western alliance structure and NORAD in particular, Canada will gain immeasurable status amongst third world and non-aligned states. While this may be partially true, this goal is of questionable value. Having achieved this status, what could Canada do with it? "It would be too bad if to gain greater standing among the uncommitted peoples we cut our ties with Washington only to discover that, once adrift, we no longer counted for much in New Delhi."¹³ Canada derives a great deal of status and prestige from her relationship with the United States. Many nations view Canada favorably because of this relationship and believe that Canada has at least some influence with the United States. As such, Canada is viewed favorably as an intermediary. By acting as an intermediary, Canada is in the unique position of being involved in international issues to a greater extent due to the special relationship which exists between Canada and the United States. In fact, many nations view the North American model as one which approaches the ideal as far as issue resolution and cooperation is concerned.

Therefore, it is possible to reject nonalignment on those grounds. Canada gains more influence through the Western alliance structure which includes both NATO and NORAD. By participating and working within the accepted structure of NORAD, it should be possible to influence policy to suit Canadian needs. While this is true for the most part, there are some problems with this line of reasoning as well. There are underlying assumptions in this

argument which require that both of the partners are equally matched in most respects. As noted earlier, a comparison of population, gross national product, military strength, and other relevant categories reveals that Canada and the United States are far from being evenly matched. In Power and Interdependence: World Politics in Transition, Robert Keohane and Joseph Nye point out that it would seem logical that the United States should dominate the relationship. "A simple overall structure explanation tells us that in a bilateral system in which one country had thirty-seven times the military expenditures of its neighbor was twelve times its economic size, the larger country would prevail in more major disputes than the smaller."¹⁴ In studying a series of issues and how they were resolved it became apparent that the eventual resolution of the issues did not really favor either country. Canada did much better than expected. In fact, resolution of issues between the two countries did not favor the United States disproportionately as might be expected.¹⁵

Similarly, both nations' contribution to NORAD is heavily skewed in favor of the United States. If the amount of influence were directly proportional to the contribution, Canada would not have any influence at all. Although this is not the case, it is a source of disagreement and frustration for American officials. Typically, the American response is one of: "Why do the Canadians complain about NORAD? We are supplying most of the money. We are supplying most of the men."¹⁶ Canadians have a hard time with

this sentiment particularly because it is not entirely accurate. It will become apparent through the data presented in Chapter Four that the Canadian contribution in manpower is actually greater than that of the United States. Unfortunately, it is another of the harsh realities in that perception is sometimes given more credence than reality.

Similarly, it would be wrong to characterize the opposition to NORAD in Canada as a permanent feature. The preoccupation with NORAD and the quantity of exposure given to the topic is directly proportional to how much time remains before the next renewal of the agreement. As an issue in Canadian politics, the renewal of NORAD is often exploited quite unscrupulously. In reality, vociferous and constant opposition to NORAD is notable by its absence. This state of affairs is directly traceable to two factors in Canadian society. For the most part, Canadians are not really interested in military affairs. Canadian political culture has not placed an emphasis on military solutions to problems. It has relied on legalistic and diplomatic solutions. "The absence of a revolutionary tradition has had profound implications for Canadian political culture. It has meant the absence of a military tradition in which the armed forces might otherwise have grown and prospered as the most vital component of the nation's defences against external foes. It has also meant, relatedly, the absence of a vigorous nationalism, a cohesive sense of internal identity and assertive purpose abroad."¹⁷ As a result, defence oriented issues do not receive the attention of the populace that

they require. There is a vague understanding and even acquiescence that it is desirable to have a military but there is little understanding of the reason why one is necessary or even what form it should take. By extension, while there are individuals who are interested in NORAD and defence, the populace in general has not been stirred to become involved in the issue.¹⁸

Canadian political culture plays a large role in the general lack of interest in NORAD. Understanding military issues stems from having a desire to do so predicated on the understanding that the military has a role to fulfill. Moreover, Canada has never been subject to a direct threat even during the Cold War era. Therefore it should not be surprising that Canadians do not understand the need for a military. They are cognizant of the fact that the United States could not tolerate any intrusion upon the North American continent and as such Canada and Canadian territory would be looked after.

Second, Canada is still in search of itself. Any nation without a sense of purpose and identity cannot hope to have the confidence that is required to establish a purpose for its military. Perhaps Canada is unique in this regard. Formed by neither war, revolutionary ideology, nor nationalism, the nation suffers from a lack of direction. As Clarkson clearly notes: "A nation's capacity to establish its own military strategy, to deploy its own troops and to manufacture its own weaponry has often been taken as an indicator of the degree of its

sovereignty."¹⁹ Canada is capable of establishing its own military policy even though it has never had to form a policy markedly different from that of the United States. Critics often confuse a similar policy with not having one at all or with an inability to produce one.

With the protective umbrella that the United States extends over Canada and the convergence of security needs, there has not been a need to produce a defence policy with markedly different objectives from that of the United States. Troop deployment has similarly been a function of working within an alliance structure whereby decisions are based on achieving the maximum impact without excessive duplication of effort. This has been the case throughout history as Canadian forces have always been deployed within a multinational or alliance structure. Canada can manufacture some of its weaponry, but cannot become completely self sufficient due to prohibitive research and development costs and the relatively limited market size. Development costs of weapons systems for domestic consumption without assured foreign sales would prove to be a serious waste of funds. The Canadian requirement for any weapons system could not hope to provide sufficient economic benefit to make such an undertaking viable. Therefore, Canada has had to rely largely on foreign, primarily American, designed weapons systems which further helps to reduce costs and duplication of efforts.

The maxim that a state's freedom to act is limited in a number of ways is borne out in the case of Canada. In Danford

Middlemiss's testimony before the Standing Committee on External Affairs and National Defence of the House of Commons [SCEAND], he argued that the United States has not run roughshod over Canadian interests. In his opinion, cooperation with the United States in NORAD would effectively legitimize what would in any event prove to be an inescapable U.S. presence in Canada and thereby help to prevent the U.S. from simply acting unilaterally in Canadian air space on behalf of its own defence interests.²⁰ Therefore, Canadian participation in NORAD can also be characterized as an attempt at minimizing the temptation for the United States to act unilaterally without any external input from Canada, even when Canadian interests are at stake.

In general, while the maintenance of the status quo as far as NORAD is concerned is to the benefit and advantage of both partners, there are others who see Canadian involvement as an unnecessary irritant. "Canadian territory is less important to the U.S. in the missile age and there are those in the Pentagon who see the advantage in managing continental air defence without having to worry about the sensitivities of foreigners."²¹ While it may irritate some that it is necessary to take into account Canadian sensibilities, it is precisely by maintaining membership in NORAD that Canada can have access to information which would be extremely expensive and difficult to obtain otherwise. Where the difficulty lies is that the United States is the senior partner in the relationship and Canada has often had to take the subordinate role. Nations tend not to act altruistically. They do

tend to look after their own interests first, and then those of their allies.²² Since the goals of both nations are so similar, it usually does not matter. As such, Canadian interests are seldom ignored. So long as both nations have convergent needs and issues are discussed in a cooperative manner, friction over the direction of NORAD should be minimal.

In establishing Canadian defence policy on the basis of similar goals and interests in continental defence, Canada has established a course which precludes nonalignment. Situated as it is between the former Soviet Union and the United States, Canada would most certainly be involved in any altercation between these nations. Similarly, any inadequacies in Canadian defences would jeopardize the security of the United States. In order to prevent unilateral action by the United States and in order to increase Canadian security, Canada has had to pursue a cooperative relationship with the United States. It must be noted that any attempt by Canada to go it alone would be prohibitively expensive. Furthermore, Canadian funding for NORAD is trivial in contrast to the funds spent by the United States. Canada can get away with funding NORAD at minimal levels as the United States will continue to fund NORAD in any event. However, the relatively low contribution Canada makes on behalf of her own defence is already seen as an irritant to harmonious bilateral relations. The diplomatic consequences of severing the NORAD agreement or of reducing the meagre amount of funds currently provided for NORAD by Canada would serve to poison relations between the two

countries.

While it is difficult to find a balance, Canadian participation in NORAD has to arrive at a compromise between doing merely enough as a gesture of good will and of real participation designed to enhance Canadian security and sovereignty. By working through the established structure of the PJBD, RPG, and NORAD, Canada can maintain that balance and ensure that it retains some influence over United States actions where Canadian interests are directly affected. "The most effective way to avoid misunderstandings as to who should do what, where and when, is to initiate a continuous sequence of on-going Canadian - American consultations on joint problems of national defence in whatever organizational context may seem most appropriate...But mutual dependence means interdependence, which works both ways."²³ Taking on the responsibility for a larger share of the defence of North America, would provide Canada with a greater degree of both security and sovereignty. The ability to rely on ones own resources rather than looking to others for their assistance is a key component in any nation's ability to assure its own security and sovereignty.

Furthermore, the economic dimension must not be overlooked. Canadian participation in NORAD and weapons procurement for use by Canadian forces has always had an underlying assumption of economic benefit attached to it. When the Canadian government made its decision to purchase a new fighter, the CF-18 was chosen for several reasons. One of the most important ones being that

this particular contract offered the highest degree of economic benefits and industrial spin-offs to Canada.²⁴ As such, there is a further advantage to be realized. Canada derives a direct benefit by being able to purchase this technology and potentially share in the technological spin-offs that come from it. Were the NORAD relationship severed and relations between Canada and the United States disrupted, it is possible that the cooperation in defence related industries would cool, which could have a direct impact on the industrial base in Canada.

Although the nature of the threat is changing, there are real and definable threats to North America which can best be dealt with through NORAD. The late 1970s brought with them a realization that the threat which NORAD had been created to combat was gaining new relevance. On the thirtieth anniversary of NORAD the following observation was made: "As for the future, the outlook at present, points at a recrudescence of the atmospheric threats NORAD was designed to meet. The development of cruise missiles and stealth aircraft will give the Command increasing relevance."²⁵ This sentiment has been echoed by the SCEAND report as well. In its report on NORAD, the SCEAND report came to the following conclusions (see Appendix H for the full text of the Conclusions and Recommendations of the SCEAND report);

"Canada benefits directly from making a contribution to the deterrence of an external military threat through its early warning capabilities against a surprise attack; it is guaranteed air defence in times of crisis; it gets useful information from the surveillance of space; its cost

sharing arrangements with the U.S. military permit Canada to obtain these services at prices far below those it would have to pay were it to embark on these operations on its own; furthermore, it receives indirect benefits such as its access to technically advanced military equipment, more complete knowledge of American intentions than would be otherwise available, and data gathered through U.S. intelligence networks. For these benefits it has been prepared to pay some costs, not just the \$322 million it spends annually on NORAD, but also some loss of sovereignty the international perception that Canada's involvement in NORAD compromises its independence, the possibility that Canada will be drawn into a conflict it would wish to avoid at almost any cost, and the possible distortion of its defence policy and purchasing priorities. Notwithstanding these disadvantages which, if plainly put, include the possibility of Canada's playing a role in instigating a nuclear holocaust, SCEAND concluded that the benefits received far outweigh the costs incurred."²⁶

In short, NORAD works. It is a rational response to a range of defence and security concerns which has been able to respond to a changing strategic and technological situation. Whether or not the Soviet Union exists may be seen as largely irrelevant to the continued viability of NORAD. The surveillance function of NORAD which enhances Canadian security and sovereignty will remain necessary for the foreseeable future. Reopening the issue would only serve to disrupt the relationship between the United States and Canada. As such, there is a certain amount of political inertia which makes it desirable to not upset the status quo. If it is allowed to evolve to meet new challenges, NORAD can remain a vital and relevant factor in maintaining the security of the North American continent.

Chapter 1 Footnotes

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4. "It is typical of U.S. - Canadian relations to realize that while NORAD to most Canadians is the most blatant example of the interdependence they cannot avoid, it is almost totally unknown in the United States.
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7. "Canada was often encouraged in its moderator role by foreign governments both within and without the Western alliance system."
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18. "Despite the hearings that have been held and the reports that have been submitted by the House of Commons Standing Committee on External Affairs and National Defence and the Senate Subcommittee on National Defence, the media have brought little of the current debate among the experts to the attention of the Canadian public, which is probably less informed about military questions than the citizenry of any other NATO country."
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THE HISTORICAL EVOLUTION OF NORAD

Chapter 2

There were many areas where both Canada and the United States recognized the need for closer ties. Nowhere was this more clear than in the area of defence. The developments in defence cooperation between Canada and the United States preceding American entry into World War II formalized the process. With the announcement of the Ogdensburg Agreement on August 18, 1940, the two governments agreed to create a Permanent Joint Board on Defence which was to begin immediate studies relating to sea, land, and air problems, including the questions of personnel and material utilization. This historic agreement went far beyond what had initially been envisioned by either side. Originally, the discussions were to be of an exploratory nature to see how efforts could be combined. However, the necessity and wisdom of collaboration in defence matters resulted in the Ogdensburg Agreement, which in turn spawned the Permanent Joint Board on Defence.

The Joint Board laid down general principles to govern the disposition of forces and materiel, and assigned broad areas of responsibility to each of the national forces. Although a broad division of duties and responsibilities was arrived at, an integrated command structure was still beyond the grasp of the proponents of continentalism. As can be expected, neither country desired to give up control over their respective national forces. It was politically unpalatable to create an integrated command structure, particularly given Canada's entry into World War II before the United States. As a result both nations decided that

it would be best to maintain separate national commands for the time being.

The state of North American air defence cooperation can be understood by examining the history of defence cooperation between the United States and Canada. Efforts to secure a continental defence arrangement between Canada and the United States have roots which stretch all the way back to World War I. It is important to get a sense of how NORAD came into being. By examining the record of how NORAD came into being and the typical cost sharing arrangements arrived at in the past, it is possible to provide a context against which the present situation can be understood. Cooperation in the area of air defence between Canada and the United States has been notably harmonious with the exception of the events during the Cuban Missile Crisis. As this significant event in the history of Canada United States relations demonstrates, no system or relationship is entirely immune to disagreements and conflict. Furthermore, it is also notable that even during this crisis in Canada United States relations, NORAD functioned as it was supposed to. It was diplomacy which failed, and thus precipitated a crisis in relations between the two nations.

This chapter encapsulates the formative period through to the end of the 1970s. More significantly, the late 1970s and early 1980s marked a renewed interest in air defence and the revitalization of NORAD as a significant component of continental defence and as such deserve to be treated separately.

THE EARLY PHASE OF CONTINENTAL DEFENCE COOPERATION

During World War II, Canada and the United States collaborated on many projects including the development of the atomic bomb. The United States had not been an active participant in World War II until December 7, 1941. Subsequent to the events at Pearl Harbor and the entry of the United States into the war, the pace and scope of collaboration between Canada and the United States increased. Notable among these were the Northwest Staging Route and the related Alcan Highway, which provided links between strategic Alaska to the United States by air and land; the Canol project which supplied Alaska with oil from the Mackenzie Valley field through an extensive system of pipelines; the construction and operation of a series of vital meteorological and communications centres along the ferry command route as it passed over Canada's northeastern wilderness (Project CRYSTAL); and subsequently a great extension of the air ferry route (Project CRIMSON), across mid-Canada, Labrador, Greenland, and Iceland. In addition, Canadian units assisted in the defence of Alaska while Canadian, British, and American air and sea forces cooperated in the vital antisubmarine and convoy operations on the North Atlantic. Subsequently, a combination of factors would serve to maintain these collaborative ties. The alliance forged between America and Canada during World War II combined with the natural North/South trade and economic patterns, provided the impetus for

continued defence collaboration at the close of World War II.

While many impressive accomplishments resulted from collaboration between the two countries, there were still many problems which affected relations when it came to joint defence measures. The need for national control over manpower and resources created squabbles over jurisdiction. Cultural differences also contributed to create friction in the relationship.¹ Worst of all, the traditional fear that Canadian sovereignty would be compromised was all too prevalent. From time to time, such concerns were aired quite openly. In 1946 the Canadian ambassador in Washington, Lester B. Pearson, took the opportunity to express this sentiment in the pages of Foreign Affairs, the house organ of the United States foreign policy establishment. He warned Americans that: "there is already an increasing and in some of its manifestations an unhealthy pre-occupation with the strategic aspects of the North; the staking of claims, the establishment of bases, the calculation of risks. For no country have these faint stirrings of unhallowed but all too familiar fears a greater or more sinister significance than for Canada."².

Even as the fear of encroachment on Canadian sovereignty was being raised, collaboration in defence matters proceeded apace. More discussions exploring new areas of collaboration were held and forces of both countries participated in joint military exercises in the North. To alleviate nervousness over perceptions of American encroachment, a Joint Statement on Defence

Collaboration was issued stating that; "as an underlying principle, all cooperative arrangements will be without impairment of the control of either country over all activities on its territory."³ With Canadian objections temporarily assuaged, the process of harmonizing defence efforts proceeded.

During the immediate post-war period, there were many reasons for both Canada and the United States to move away from concentrating their efforts on defence. No credible threat to the North American continent existed. Public opinion held that this was a time to cut back on defence spending. However, there were signs that the Soviet Union could emerge as a potential threat to the security of North America. As relations deteriorated between the former allies, it became clear that no reprieve was forthcoming. The Permanent Joint Board on Defence undertook a study which provided some very revealing information. Through their examination of the Soviet Union's polar operations, the Joint Board's members realized that for many years the Soviet Union had been collecting data and conducting air and sea operations in the polar area on a scale that dwarfed the efforts of any other country.⁴ Having realized that there was a potential threat to the North American continent and a gaping hole in their defence plans, both nations moved to remedy the situation. As long range aviation had already demonstrated, the shortest route between the Soviet Union and North America was a trans-polar one. Therefore a change in defence priorities was required to deal with the largely unprotected northern reaches of the continent.

While the United States held a monopoly on nuclear weapons technology for the moment, few expected that this situation would continue. "Most analysts thought that there would be some breathing space for the United States; their estimates of when the Russians actually would acquire the bomb varied widely, ranging from three to five to twenty years."⁵ Through espionage, the Soviet Union was able to increase greatly the pace of both their nuclear weapons and aviation development. Similarly, the technological gap in the design and production of long range aircraft capable of functioning as delivery platforms for nuclear weapons was rapidly closing. At the May Day parade and fly-past in 1948, the Soviet Air Force displayed several long-range aircraft which appeared to be copies of a U.S. B-29 which had been impounded following a forced landing in the Soviet Far East toward the end of World War II. A much more serious development was to follow. In September of 1949, the Soviet Union detonated their first nuclear bomb.⁶ These two events, along with a rapid deterioration of relations between the Soviet Union and the United States resulted in a new found urgency to protect the North American continent.

Prior to 1949, little attention had been paid to the need for an air defence system for the protection of the United States. With the Soviet Union's apparent development of long range aviation and the ability to operate on an intercontinental scale came the need to protect the United States from airborne attack. Most of the efforts on the part of the United States had

concentrated on the development of a superior bomber force which was incorporated as Strategic Air Command (SAC). Secondary to SAC, the United States concentrated on Tactical Air Command (TAC) whose role was to provide air cover for ground forces. Air defence was given a low priority as there was little reason to feel threatened by any country so long as the technological monopoly on atomic weapons could be maintained. Nevertheless, the United States Army under its Army Air Forces created the Air Defence Command in March of 1946.⁷ The Air Defence Command (ADC) was given the task for providing air defence for the continental United States with a very small allotment of manpower and equipment.

Following the detonation of the Soviet Union's first atomic bomb and with the belief that the Soviet Union was developing a long range bomber capability, the United States was forced to place a greater emphasis on air defence. As relations between the Soviet Union and the United States deteriorated, greater quantities of money and equipment were allocated to provide increased air defence capabilities. With the Berlin crisis of 1948, the United States would deploy its first active air defences. In the following year, the United States Congress finally provided funding for a permanent air defence system.⁸ As the United States proceeded in establishing an air defence system, it became apparent that Canadian territory and manpower would figure prominently in these plans.

The MCC (Military Co-operation Committee) had in 1946

proposed that a number of bases be built in both Canada and the United States to provide an air defence network.⁹ While the proposal mostly concentrated on setting up radar installations and air bases for the deployment of interceptor aircraft, it had also marked the rejection of a previously proposed joint command for these forces. Neither Canada nor the United States wished to get involved in a joint command at that point. It was unacceptable from a military, as well as a political standpoint as such an arrangement would require some loss of direct national control over their respective forces. However, the proposed radar network was desirable, and as such had strong support in both countries. Nevertheless, approval for the start of developing such a radar network was just as difficult to obtain as were the actual funds to proceed with the work.

The passage of the National Security Act by the United States in 1946, established the United States Air Force (USAF) in 1947. In November of 1947, the ADC submitted a scheme for a continent wide radar system entitled Plan Supremacy. The plan entailed the erection of a vast network of 411 radar stations, 375 of which would be in the United States, with the rest in Canada and Greenland. The Air Defence Command's ambitious plan had little hope of being approved due to the fact that it was too costly. But, it was an accurate representation of what would be ideally required for the establishment of an air defence shield of North America. Plan Supremacy proposed by the Air Defence Command and endorsed by the USAF soon ran into serious opposition.

It was clear that the development and deployment of an extensive network such as was proposed under Plan Supremacy would be prohibitively expensive. After a significant amount of debate, the U.S. Bureau of the Budget refused to grant the Supremacy bill administrative endorsement, even though it entailed no immediate allocation of funds. The long term costs of the radar network proposed under Plan Supremacy were still a cause for concern. Further debate ensued. Clearly, an air defence system was becoming necessary and one would have to be built. But the question remained whether everything that was requested under Plan Supremacy was absolutely necessary. Plan Supremacy was passed on to the Joint Chiefs of Staff (JCS) for consideration. From there, it was passed along to the Joint Strategic Plans Committee (JSPC) for interservice consultation. It was concluded that a scaled down version of Plan Supremacy was possible. As a result, the USAF proceeded with a revised version of Plan Supremacy in 1948.

The situation in Canada was worse. Very little funding was available to mount any type of air defence system, although the first regular postwar squadrons were operational in Canada. Air defence had been given a low priority until the deterioration of relations between the Soviet Union and the United States warranted that Canada also undertake the development of an appropriate air defence system. The first step was the formation of the Air Defence Group (ADG) and the establishment of two fighter squadrons. The first Squadron (410 at St. Hubert,

Quebec), was activated in December 1948, along with 1 Air Defence Group. ADG was given responsibilities similar to USAF's ADC for organizing and planning the air defence of Canada. The second Squadron (420 at Chatham, New Brunswick), began operations in September of 1949.

Canada had not developed a proper radar network either. There were huge gaps in coverage and it was felt that it was pointless to develop an extensive radar network without an appropriate number of aircraft which could do something once an enemy aircraft was detected. By 1950, the Royal Canadian Air Force (RCAF) had constructed or planned for the construction of only four or five radar stations in all of Canada. This sad state of affairs had not escaped the attention of the United States. That such a vast expanse of territory was so poorly defended was obvious. Giving enemy aircraft the ability to approach undetected until they were too close to their targets was not a tolerable state of affairs. It was also clear that in order to remedy this situation the United States would have to accept the bulk of responsibility. General Ennis Whitehead, speaking to USAF headquarters, made the following observation: "Unless the United States foots most of the bill, the necessary radars in Canada will not be built."¹⁰ Discussions were set in motion again to determine what Canada planned to do about the lack of radar stations across Canadian territory.

Growing impatience by the USAF with Canadian efforts to improve the radar network resulted in the problem being referred

to the Joint Chiefs of Staff. The Joint Chiefs of Staff referred the problem back to the USAF and suggested that discussions be held with the RCAF to produce a joint plan. In the late summer of 1950, representatives of the two air forces jointly produced 'A Plan for the Extension of the Permanent Radar Net of the Continental Air Defense System,' which recommended the construction of new radar stations in Canada, with costs to be shared by both countries.¹¹ In general, the report's findings pointed out the inadequacy of the existing radar system. Furthermore, it noted that the requirements of both countries overlapped to a great extent.

Under this plan, it was proposed that 31 radar stations be constructed in Canada and one in Greenland. The Canadian sites were all to be manned by the RCAF, except for three in Newfoundland to be built at existing American bases. Radar data would be shared by the U.S. and Canadian air defence commands. The costs would be divided as follows: Radars essential to the defence of one country to be paid for by that country while radars essential to the defence of both countries were to be paid for half by Canada and half by the United States. The cost of constructing the sites as well as equipping and manning them was used in calculating the total. The two air forces figured that the cost to the United States for its share of the construction would be \$49.5 million. The Canadian construction bill would be \$29 million. Annually recurring costs for the United States would be \$10.5 million; for Canada, \$6 million. It was believed that

the breakdown of costs should apportion one-third for Canada, two-thirds for the United States.¹²

The proposal was strongly supported by the RCAF. On the basis of cost alone, the proposal was very attractive. Furthermore, this endeavor had a very strong appeal to the proponents of defence continentalism. However, there was a problem in finding adequate numbers of suitable men to train for the manning of these installations. In the end, not only did the Americans end up paying for two-thirds of the 'Pinetree' radars but they had to man most of them.¹³ Unfortunately, there was little the Canadian government could do about this embarrassing turn of events. The technical skills, training facilities, and other infrastructure simply was not available to produce the required individuals in Canada at that time.

The details for implementing this plan were worked out by the Permanent Joint Board on Defence under PJBD Recommendation 51/1.¹⁴ Title for the stations would be vested in the Canadian government, and Canada would retain the right to assume the manning of all the stations. Funding for the radar stations was to be divided on a two thirds basis being apportioned to the United States with Canada assuming the remaining third of the cost. The United States would be granted the authority to do what was necessary to operate its stations, but only insofar as was permitted by Canadian law. While these conditions were acceded to by the United States, there were other problems which needed to be worked out before work could proceed on the Pinetree radar

network. Unable to afford an appropriate radar network and to provide adequate manpower to operate the network, the Canadian government desired to keep the arrangements as secret as possible to avoid both the public humiliation and embarrassing questions that such an admission would create.¹⁵

In addition, the Canadian Department of External Affairs was having difficulties with the proposal and the perception it would create within Canada. While this relationship offered extremely attractive cost sharing terms, it was important to make it clear that Canada was not the recipient of foreign aid. Territorial and sovereignty issues were also a problem. Discussions were held by the Canadian Department of External Affairs and the United States State Department in an effort to resolve the issue. One such meeting, held in May 1951 between R. A. MacKay head of External Affairs' Defence Liaison Division, and Dan C. Bliss, a senior official in the U.S. embassy revealed some serious concerns.¹⁶ MacKay felt that the arrangement implied another cession of territory by Canada to the United States and the advent of additional U.S. troops on Canadian soil. Canadian public opinion would react adversely to this and all other projects then under consideration. Notwithstanding these serious objections, on 1 August 1951 Hume Wrong, the Canadian ambassador in Washington, and [Assistant Secretary of State] George Perkins exchanged notes formally and diplomatically ratifying what the two governments had already agreed to in approving PJBD Recommendation 51/1.¹⁷ This accomplishment was only the beginning. There were other

major projects in the planning stages which would require Canadian territory for their full implementation.

Studies were undertaken to assess the air defence needs of North America at the end of 1950 by both the RCAF and USAF. Research establishments were given the task of determining what air defence needs would be in the not too distant future, and to develop suitable technologies to meet those needs. Under a joint effort between the Massachusetts Institute of Technology and the United States Department of Defence, a laboratory dedicated to the study of air defence problems was established in Lincoln, Massachusetts. The Lincoln Project, named after the location where it was undertaken, consisted of a series of studies to develop air defence technologies and strategies.¹⁸ These studies led eventually to the construction of three warning lines: the Pine Tree radar network; the McGill or Mid-Canada Line; and, most difficult and most ambitious of all, the Distant Early Warning Line (DEW) to rim the Arctic and northern sea approaches to the continent. These radar stations would eventually be combined into the data acquisition side of NORAD.

The construction of a radar network spanning the Canadian north would provide additional time to mount an appropriate response to any airborne attack over the polar region. It would allow aircraft to take off from their bases rather than to be caught sitting on the ground. The Mid-Canada line was initially going to be built as an entirely Canadian effort. The Canadian government rationalized that if Canada were to finance the

development and construction of the Mid-Canada Line fully, the United States would be obliged to pay for the construction of the much more expensive DEW Line.

Controversy was attached to this development as well. Some members of the defence establishment in the United States thought that the Mid-Canada Line was redundant as the DEW Line was thought to be sufficient. However, the United States government eventually came to the conclusion that both the Mid-Canada and DEW Lines were necessary as they would complement each other. The Mid-Canada Line stretching along the 55th parallel would provide confirmation of information gathered from the DEW Line located along the periphery of the continent. In addition, the Mid-Canada Line would allow for the gathering of information crucial to tracking the progress of intruding aircraft.

Other defensive systems developed under Project Lincoln would also be utilized to form a network which would give impenetrable coverage to the continent. Key amongst these systems was the development of a computerized Semi-Automatic Ground Environment (SAGE) system.¹⁹

Arrangements for the construction of the Mid-Canada Line and the DEW Line were finalized in 1955. Ottawa had agreed to fund the Mid-Canada Line in September of 1954. This was followed by a May 1955 exchange of notes between the Canadian Ambassador in Washington and the State Department which formalized acceptance by the U.S. of a Statement of Conditions to Govern the Establishment of a Distant Early Warning System on Canadian

Territory. Conditions for the establishment of the DEW Line were similar to those imposed earlier during the construction of the Pinetree radar network.

"Title for all sites would remain with the Canadian government. Canadian electronic equipment was to be used. Canadian law was to apply. Canada reserved the right to take over the manning and operation of the stations. Special provisions were inserted in the statement for the protection of the Inuit, and Canada's air carriers, telecommunication policy, and geological, topological, hydrographic, and geophysical data, as well as Canadian archaeological and historical sites. Canadian customs and immigration regulations were to be respected, as were the hunting and fishing regulations of the Yukon and the Northwest Territories....Canada received what the United States had up to that time assiduously endeavored to avoid, namely, an explicit recognition of Canada's claims to the exercise of sovereignty in the Far North."²⁰

With the potential of an integrated continental radar network close at hand, there were a few items which still needed to be resolved. Canadian efforts to procure substantial numbers of jet powered interceptor aircraft were thwarted by both time and expense. The development of a Canadian aircraft which could perform the air defence intercept mission had been started quite soon after World War II. Final design specifications for the Canadian interceptor, dubbed the CF-100, were drawn up in 1946 by A. V. Roe Canada, Ltd. in Malton, Ontario.²¹ In spite of this early start, very few aircraft were actually procured by 1951. Funding for the procurement of air defence squadrons had not been readily available and the production of the aircraft was also quite slow.

This situation was disturbingly similar to that which

prompted the United States to act and establish an appropriate radar network. As a consequence, the USAF requested that USAF aircraft, controlled by the air defence system of the United States, engaged in intercepting unidentified aircraft crossing the border between the United States and Canada, be permitted to fly over Canadian territory as may be required to carry out effective interceptions. The defence forces of either the U.S. or Canada would be severely handicapped by having to commence or terminate defensive action at a geographical border.²² Once again, the government of Canada was placed in a difficult position. Although the RCAF and USAF concurred, giving up total control over Canadian airspace was politically unpalatable and perceived as a tough sell to the people of Canada.

A compromise was reached which allowed USAF aircraft to carry out intercept missions over Canadian territory.²³ Restrictions were placed on what these aircraft could actually do once they had intercepted their target. They would have to wait until they were back over American territory to start shooting or to try to force the intruding aircraft to land. In addition, U.S. interceptors would be allowed into Canada to investigate only aircraft which had not filed a flight plan, or which were off course and heading towards the American border. Although these restrictions would severely curb the effectiveness of USAF activities, they were seen as peacetime restrictions, and it was possible to accept them on an interim basis while a better arrangement was negotiated.

As aviation technology progressed and aircraft became ever faster, both the USAF and RCAF realized that the amount of time available to mount a response to aggression was steadily decreasing. Therefore, it was unlikely that sufficient time would exist to obtain permission to shoot and/or force down an aircraft while operating over the neighboring country's territory. Their solution to this problem was to establish a unified command structure as part of an integrated air defence system.

Such a proposal had existed previously and had been immediately repudiated by both the United States and Canada at the political level. The RCAF and the USAF set out a proposal to the Permanent Joint Board on Defence in order to resolve the situation.²⁴ They requested several changes to the current arrangements. First, the RCAF and USAF wanted blanket authority to conduct joint training efforts without being obliged to seek permission every time from political authorities, as was then required. Second, they wanted standing authority to reinforce one another in an emergency situation. The Permanent Joint Board on Defence acted on these matters and issued Recommendation 51/3 which allowed for the joint training of air defence forces.

The second part of this wish list was unacceptable. Surrendering control of national air defence forces to another country was something neither the United States nor Canada were comfortable with. Nevertheless, the impasse was resolved. The two countries reached an agreement which allowed elements of one participating force when operating in the areas of responsibility

of another to be under the control of the nearest Air Defense Control Center for all the functions normally performed by the Center. This development was crucial in the formation of an integrated command structure. It was the first step in establishing a series of conventions and operational practices which were to be followed by both Canadian and United States aircraft.

Another major problem that existed between the two countries was the fact that the RCAF, unlike the USAF, did not have a standing order to shoot or force hostile aircraft to land. There would be little point in allowing USAF aircraft into Canada and then not allowing them to carry out their mission. The issue was resolved in November 1951 when the Cabinet Defence Committee granted the RCAF air defence commander authority prior to the declaration of war or of a national emergency to force hostile aircraft to land or to shoot at them.²⁵

With the resolution of these problems and the establishment of a continental radar defence network, the rationalization of the command structure was next on the agenda. The United States after a great deal of debate moved to organize their continental defence force by creating a new command. On August 31, 1954, Continental Air Defence Command (CONAD) moved its administrative and functional headquarters to Ent Air Force Base at Colorado Springs.²⁶ CONAD represented a real attempt at integrating the various services into a cohesive force capable of dealing with intruding aircraft. In this joint effort, the Army furnished

antiaircraft units, the Navy and Marine Corps provided their forces as required, and the Navy additionally acted as an integral part of the radar line encircling the country. This significant step created additional impetus for the RCAF and USAF to pursue the creation of a joint command structure.

Ties which were forged between the USAF and RCAF during this period were quite deep. The first RCAF liaison officers took up their duties at USAF ADC headquarters in Colorado Springs in 1951. Exchange of information and co-operation between the RCAF and USAF had been quite phenomenal to the point where both services viewed the defence of North America as a problem to which the answer was a co-operative effort.

However, one problem persisted. The Permanent Joint Board on Defence realized; "that forces deployed to defend against attack from one direction (for instance from the North) are not now under one commander, which imposes serious practical limitations in day-to-day training and in our capability to conduct a properly co-ordinated air battle in case of actual attack."²⁷ The USAF and the RCAF had recognized quite some time ago that forming a joint command for the air defence of North America was desirable. While the Joint Chiefs of Staff recognized that this was a desirable thing, they were cautious in their endorsement of the plan.²⁸ The Joint Chiefs of Staff realized that Canadian sensitivity over sovereignty would be a major problem which would be difficult to overcome. They had every confidence that the U.S. and Canadian military together could create and operate an

effective joint command. Typically, it was at the political and bureaucratic level in Ottawa where concerns over Canadian sovereignty would cause problems. Previous exposure to External Affairs bureaucrats during the negotiations for the Pinetree, Mid-Canada, and DEW Line radar systems had taught the Joint Chiefs of Staff not to act in a manner which suggested United States encroachment upon the territory of Canada.

Both Canada and the United States tried to downplay the issue in hopes that it would go away, but this did little to stem the enthusiasm with which the USAF and RCAF held for the plan to form a joint command. During the winter of 1954-55 the RCAF/USAF joint planning group submitted a plan which included the appointment of a single air defence commander.²⁹ Having already realized the desirability of producing a joint command, while being aware of Canadian sensitivity to sovereignty issues, the United States Joint Chiefs of Staff proceeded cautiously. A proposal was drafted to explore the possibility of further integrating RCAF forces with those of the USAF. The JCS outlined their conviction that integrated operational control, including authoritative direction, was necessary, and they asked for the views of the Canadian chiefs on how to proceed with combined study and planning.

Any type of study undertaken at this point, particularly when conducted by the USAF and RCAF, could only reach one conclusion. An ad hoc group was formed under the direction of the Military Study Group and their report simply reiterated the previous

position of the RCAF and USAF in the desirability of combining their efforts. All that remained was to work out an arrangement which avoided the creation of a formal command. The ad hoc study group came upon a solution which was published in their December 1956 report. They suggested that operational integration depended not on a command or other organization but rather on an individual. To that end, the ad hoc group decided that an appropriate title for such a commander would be Commander-In-Chief, Air Defense Canada-United States (CINCADCANUS).

CINCADCANUS was to report directly to the U.S. JCS and Canadian Chiefs of Staff Committee, who in turn would report directly to their representative political authorities. A deputy CINCADCANUS would be his second in command, and not be of the same nationality. In practice this position would always be held by a Canadian, since the USAF would always want one of its own as Commander-in-Chief.

This recommendation and others included in this report were eventually incorporated into what became the basis for the formation of NORAD. The recommendations further proposed that such an arrangement could be built upon the CONAD structure already in place at Colorado Springs. The United States JCS approved the report on the sixth and the Canadian chiefs followed suit on the eighteenth of February, 1957.³⁰ Once approval had been gained at the military levels, all that remained to be done was to secure political approval to enact the recommendations of

the ad hoc study.

This proved to be more difficult. The approval to create a CINCADCANUS was delayed by an election in Canada. There is little doubt that the Liberal government of the day did not act prior to the election in order to avoid giving the opposition an issue which it could use during an election campaign. Much to their dismay, the Liberals would lose the election and would not have to deal with the issue at all except to criticize strongly the incoming government for its handling of the matter. It would be the incoming government of John Diefenbaker that would have to deal with the issue and ensuing fallout from the signing of the agreement which created NORAD.

It seems that the new Prime Minister took the view that the negotiations had gone so far that the NORAD arrangements were complete.³¹ He seems to have signed the 1957 Agreement without believing that he was doing anything more than implementing a decision of his predecessors. Having received the approval of Minister of Defence George Pearkes and Prime Minister Diefenbaker on 24 July, General Charles Foulkes began, in conjunction with American authorities, the preparation of a press release announcing the new air defence arrangement. All that remained was the creation of the appropriate nomenclature and the actual signing of documents.

The agreement was finalized through an exchange of notes between the two governments. In typical fashion, the exchange of notes was also quite informal and not terribly specific. (See

Appendix A). On the 12th of September, 1957, NORAD came into existence at Colorado Springs. The debate and controversy which would ensue in Canada would prove to be most difficult for the newly elected Diefenbaker government. This issue would present new difficulties for the Diefenbaker government on a continual basis and would continue to spark debate in Canada to the present day.

The formation of NORAD was seen by both the USAF and RCAF as a great step forward towards the rationalization of the air defence needs of the North American continent. Nevertheless, opposition to the agreement was most vocal in Canada as can be seen in the debates carried out after the fact in the House of Commons. Outrage was expressed over the fact that such an important agreement was entered into without first debating it in the House of Commons. As the debate on the issue occurred after the fact, the critics claimed that the government was behaving in a completely inappropriate manner.

Certain provisions of the NORAD agreement also provided for spirited debate. For example, the appointment of a Canadian officer as deputy CINCNORAD posed some questions as to the true nature of the relationship. Critics argued that since Canada was not in the position of appointing a Commander for NORAD, Canada and Canadians were in a subordinate position in relation to the United States. If one looks at the NORAD agreement, provided in Appendix A, nowhere does it state that the Commander-in-Chief NORAD (CINCNORAD) shall be from the United States. In practice

CINCNORAD has always been an appointee of the United States and the Deputy has always been from Canada. As there are times when the Deputy is in command due to the absence of the other, the only real difference is in the title. Titular concerns aside, the furor shifted to the wording and text of the notes.

To some critics it seemed odd that the Canadian government would enter into an arrangement whereby a great deal of control over national forces was ceded to the United States. However, given the Cold War atmosphere that permeated international relations during this era and the change of governments in Canada, there was no other option for Canada. In addition, the economic benefits of the arrangement were highly favorable to Canada. Very attractive terms were negotiated for the construction and establishment of a radar network which would provide comprehensive coverage of the North American continent. Furthermore, the relationship had evolved as a result of USAF and RCAF cooperation. Government policy and legislation did not serve as a catalyst for the formation of NORAD. Policy and legislation followed initiatives undertaken by the respective air forces of both countries.

NORAD: 1957 - 1968

The initial furor over the NORAD agreement had little chance of dissipating as several developments would combine to prolong the controversy. The Cuban missile crisis in the fall of 1962,

weapons procurement in Canada, the possible use of nuclear weapons by Canadian forces, and whether or not to permit stationing of nuclear weapons on Canadian territory would keep the issue alive. In addition, personality problems between John F. Kennedy and John Diefenbaker would contribute to a general deterioration of relations between the two countries. While the relationship between the two countries suffered on all fronts, the effect was most profound on defence issues. Diefenbaker's foreign policy stance where the United States was concerned accomplished little. It angered and confused the United States while precipitating the greatest defence crisis that Canada has ever faced.

Louis St. Laurent's government and defence policies were regarded by Diefenbaker as being far too subservient to American wishes. John Diefenbaker believed that it was necessary to move Canada further from dependence on the United States. While this view had profound influences throughout his Government's rule, it did not seem to influence his decision to enter into the NORAD Agreement. Although Diefenbaker and his party were elected on what amounts to a nationalist Canadian platform opposed to entanglements with the United States, he was well aware of the repercussions of backing out of the NORAD agreement. His Minister of Defence, Pearkes, held a view similar to that of Diefenbaker prior to becoming well apprised of the situation. Pearkes grew to appreciate the United States and the benefits of the NORAD agreement. His thinking is revealed in the following statement:

"It is only by working together that we can maintain ourselves as an independent country...If we refuse to do anything, why, then, the United States would say that they had to do it and they would just move in here and we would not be a partner, we would just be little more than a servant of the United States."³² While Pearkes was somewhat more pragmatic than Diefenbaker, it was Diefenbaker's views and attitudes which ultimately shaped defence policy. This situation was most unfortunate as Diefenbaker was deeply suspicious of American motives. His attitude and actions would seriously hamper Canada - United States relations.

Additional controversy was injected into the debate over various weapons systems and Canadian involvement in nuclear defence. Involved in the controversy were the Avro Arrow, the CF-101 Voodoo, the Bomarc-B missile, and the Lacrosse rocket. Warsaw Pact forces were seen to have numerical superiority in both equipment and manpower and as such, NATO and NORAD strategy had relied largely on countering the threat with a nuclear based deterrent. The Canadian Government had procured a variety of weapons systems designed with nuclear payloads in mind and then compromised them by not procuring the nuclear warheads needed to make them effective. It seems that the government of the day had a poor grasp of the technological and strategic implications of weapons systems and the doctrines which accompanied them. This pattern repeated itself in the case of the CF-101 Voodoo, the Lacrosse rocket, and the Bomarc-B missile. Furthermore, with the Avro Arrow debacle, the controversy over Canadian defence policy

would reach a new pitch.

Diefenbaker did not want Canada to become entangled with the United States and nuclear weapons technology. To him, this was yet another example of American interference in Canadian affairs. As far as he was concerned, the fewer such entanglements, the better. While on the one hand it was an appropriate course of action from Diefenbaker's perspective, the manner in which it was carried out seemed like a delaying tactic, as well as indecisiveness. Even though Diefenbaker's strategy was to keep Canada from becoming committed to a nuclear role, things did not work out that way.³³

Shortly after the cancellation of the Arrow, it became apparent that the Soviet Union was not about to rely exclusively on long range missiles. When U.S. intelligence bodies revised their previous estimates of an almost exclusive Soviet reliance on long range missiles and reported that the Soviet Union was also continuing the development and production of long range bombers, it became apparent that interceptor aircraft were still going to be necessary to counter this threat. Since Canada had abandoned its own interceptor program, it could fill this gap in its defence system only by purchasing new types of U.S. built interceptors. "Inevitably, public opinion in Canada was greatly disturbed by the apparent contradiction between dropping the Arrow and then, only a short time later, being urged to stock up with U.S.-built aircraft....the skein of charges and countercharges, some involving allegations of bad faith, has

never been fully unraveled."³⁴

While already embroiled in heated debate over this issue, the Canadian government faced additional pressure over the procurement of nuclear warheads. The question of whether or not to obtain nuclear warheads still remained unresolved as did the question of allowing USAF and SAC aircraft the right to fly over Canadian territory with nuclear weapons and to use those weapons in repelling an attack.

From a political standpoint, it is easy to see why the issue of procuring nuclear warheads and allowing them to be stationed on Canadian territory was a difficult one. Faced with public opposition and under attack in the House of Commons, Diefenbaker appeared indecisive. It appears that he decided to stall as long as was possible.

"After 1959 there were understandable political reasons for caution about undertaking nuclear commitments, because a determined campaign against nuclear weapons was organized by groups like the Canadian Campaign for Nuclear Disarmament, which argued that nuclear weapons committed Canada too unreservedly to the United States and impede her ability to take initiatives to reduce tensions in the world. These arguments were likely to appeal to Mr. Diefenbaker, and yet they do not appear to have been in his mind in 1959. His hanging back from making a definite commitment must have been caused by a failure to reach satisfactory agreement on control, or a desire to keep his hands free, rather than an opposition to all nuclear weapons."³⁵

The decision that was eventually reached would prove unsatisfactory to both Canadian forces and their United States counterparts. Canadian forces were told to use ballast to

simulate the weight that a nuclear warhead would add to an aircraft. The Canadian Government also arranged with the United States for nuclear warheads to be brought into Canada for use by Canadian forces in times of crisis. Such a policy had little chance of being favorably accepted as response times were steadily decreasing. In any real crisis, there would have been insufficient time to transfer warheads to Canada.

SAC aircraft had for some time already flown over Canada with nuclear weapons on board. Reports of these actions in the early part of 1958 stirred up controversy in Canada.³⁶ B-47 and B-52 bombers of the Strategic Air Command were carrying out training flights over Canadian territory with nuclear weapons onboard. These flights took place with the prior and express permission of the Canadian Government in each instance. Allowing these overflights was an act of complicity which the Canadian government wished to avoid and yet could not. To give unreserved approval to these overflights would have run counter to other government positions taken in the United Nations. The highly principled and moral tone which Canada had assumed in the United Nations in relation to nuclear weapons would be severely undermined by becoming a member of the nuclear club and by giving explicit approval to the United States to conduct these overflights.³⁷ Nevertheless, the overflights were permitted.

Many of the difficulties and strains imposed on the relationship between Canada and the United States were further exacerbated as a direct result of the poor relationship which

existed between the Prime Minister and the President.

"Observers would saddle Diefenbaker with the burden of the blame. But the seeds of his personal feud with Kennedy and therefore the seeds of the era of hostility were planted as much by the young president as by Diefenbaker. In the nascent stages of their relationship, the vital stages, it was Diefenbaker who would show some good will, and Kennedy a haughty disregard."³⁸ All of the dangers of diplomacy were present and accounted for when it came to relations between the two leaders. These intangible factors unfortunately became part of the overall course of relations between the two countries and they would continue to plague the relationship during moments of crisis.

The greatest crisis to be faced by Canadian defence during Diefenbaker's government occurred during the Cuban missile crisis of 1962. Although the nature of the crisis was well known to John Diefenbaker who had been informed through channels, Diefenbaker made it seem that Canada was not officially informed of American intentions until two hours prior to John Kennedy's television address to the American public. Diefenbaker was incensed that the American President had not directly consulted with him. The reconnaissance data gathered through overflights of Cuba and presented to Diefenbaker made it clear that the Soviet Union was installing nuclear missiles there aimed at the United States and Canada. Diefenbaker argued, that a two hour warning was hardly sufficient to assess the situation and prepare a response to it.

Canadian forces and people could hardly be expected to prepare for nuclear war within two hours.

It was true that Kennedy had not consulted with Diefenbaker on a personal level. The failure of their relationship on a personal level had intruded once again. "The president hadn't phoned Diefenbaker directly because the two men weren't speaking to one another."³⁹ Other allies of the United States had also not been informed in an effort to surprise the Soviet Union. Diefenbaker, however, was well aware of the situation.

The truth of the matter was that Canadian forces were prepared and aware of the situation as a result of their links with NORAD. However, the fact that Diefenbaker was not personally consulted was a source of contention for Diefenbaker. Under the NORAD agreement, there had been no provision made specifying what kind of consultation either party was entitled to. It had been seen as a glaring omission which had the potential to cause problems at a later date. During the crisis, an exchange ensued between the two leaders which made the nature of the relationship clear to Diefenbaker. "When were we consulted? queried Diefenbaker. You weren't, brusquely replied Kennedy."⁴⁰ It had been assumed that the system would work automatically.

Despite Diefenbaker's charge that he had not been consulted, Diefenbaker had spoken earlier with Livingston Merchant who was the U.S. Ambassador to Ottawa at the time. The U.S. Ambassador had shown Diefenbaker aerial surveillance photographs of the missile sites to establish the legitimacy of Kennedy's charge.⁴¹

Thinking that this was sufficient proof, Kennedy had assumed that Canadian support would be forthcoming and he declared that he had Canadian support. Once again, another assumption was made without proper consultation. This presumptuous act incensed Diefenbaker as is evidenced by this Diefenbaker statement. "That young man has got to learn that he is not running the Canadian Government....There is no decision which has been made as yet. I am the one who is going to decide and I am the one who has to make the declaration. He is not the one."⁴² Diefenbaker proceeded to stall for time by calling for United Nations involvement in hopes of finding a way out of the crisis without going along with Kennedy's plans. Nevertheless, Diefenbaker was eventually forced to relent and placed Canadian forces on maximum alert twenty-four hours after the crisis had passed. Kennedy's success in forcing the Russians to back down had vindicated his position and had thoroughly humiliated John Diefenbaker in the process.

With the advent of missile technology, response times had steadily decreased. As such, any strategy which relied on time consuming process of consultation would be doomed to fail. In order to deter aggression properly and implement the policy of massive retaliation, the response system would have to be almost automatic. By asserting Canadian independence at this time, Diefenbaker pushed Canada United States relations to the breaking point.

This acrimonious period in Canada United States relations demonstrated several things. First of all, Canada was not in a

position to disapprove of United States defence policies and do something about it. Second, Canada did not have the ability to pursue a truly independent foreign policy. There was no real reason to pursue an independent policy as both countries goals continued to overlap. As both countries continued to have mutual interests and desires, uniting on most defence issues was not a problem. However, as in any relationship, it is still possible to find areas where views diverge sufficiently to create problems for the partners.

The Cuban Missile Crisis demonstrated the need for ongoing consultation between Canada and the United States which is afforded by Canadian participation in NORAD. More importantly it demonstrated that, in a crisis where time constraints are crucial, the luxury of lengthy negotiations cannot be afforded. A predetermined plan of action with the accompanying organization and systems needs to be in place to deal with such situations. Moreover, as pointed out by Peter Haydon in The 1962 Cuban Missile Crisis: Canadian Involvement Reconsidered, the confusion over Canada's role in the crisis originated at the political level and was directly traceable to Diefenbaker's lack of understanding of the nature of civilian control over the military and his autocratic management style. The failure of Canada to respond was not a failure at the military level but rather a failure at the political level.

NORAD: 1968 - 1980

Despite the rather harrowing events of the Cuban Missile Crisis and the distinctly cold relations that permeated Canada - United States relations during the Diefenbaker / Kennedy years, NORAD continued to function much as it was designed to. The fact that nothing had changed and the circumstances which necessitated the formation of NORAD still existed was self evident as Canada chose to renew the agreement.

The original NORAD agreement was in force for a period of 10 years and was renewed in 1968. (See Appendix B). At that time, rather than renew the agreement for a period of 10 years, both parties agreed to renew it for a five year period. Two major additions were added to the NORAD agreement in 1968. First, it went beyond the original provision that a review of the agreement might be undertaken at any time at the request of either party. Under the 1968 NORAD Agreement, either Government had the right to terminate the Agreement following a review with a one year notice of intent to terminate being required. Second, a clause was added to the agreement which specified that it would not in any way commit Canada to participate in an active ballistic missile defence.

To be certain, support for Canadian participation in an ABM defence system in conjunction with the United States did exist in the early 1960s. In Northern Approaches: Canada And The Search For Peace, James Eayrs states: "It will be up to the United States Government, having taken counsel with its operational

researchers, to determine the most effective location of its own anti-aircraft and anti-missile defences. Canada, in its own interest, should place no obstacle in the way of locating these in Canadian territory if a more forward location than below the border seems desirable."⁴³ Support for the development and deployment of an ABM system in Canada waned throughout the 1960s. Much of the Canadian reasoning for not wanting to participate in an Anti Ballistic Missile (ABM) system was quite similar to that which transpired in the United States. The arguments against the ABM system centered on the fact that such a system was potentially destabilizing and could increase the likelihood of a sneak attack. Furthermore, it was also thought that deployment of an ABM system would lead to an all-out nuclear arms race in hopes of overwhelming the defensive capabilities of such a system. Worst of all, any ABM system had a hidden offensive capability. After launching a first strike it would be possible to rely on the ABM system to suppress any retaliatory strike. As such, development and deployment of such a system had the potential of destabilizing relations between the United States and the USSR.

Beyond the practical considerations of precipitating an all-out arms race, destabilizing superpower relations, or increasing the likelihood of a sneak attack, Canadian participation in an ABM system was unpalatable from a political standpoint. The NORAD agreement had come up for renewal in 1968 on the heels of the Canadian centennial. Combined with the issuance of a new national flag in 1965, Canadians were in a decidedly more nationalistic

frame of mind. Unfortunately, Canadian nationalism is often translated into anti-Americanism. Furthermore, a new view of Canada's role in world affairs had begun to emerge. The view that Canada should get out of NORAD and otherwise pursue a more independent line on the international scene had begun to take form. "James Eayrs, an articulate, pro-American Cold Warrior in the 1950s turned nationalist crusader for Canadian independence and diplomatic purity in the 1960s, symbolized the drastic shift in mood."⁴⁴ The political climate combined with the positions taken by the Pearson government on nuclear nonproliferation and arms limitations to foreclose Canadian participation in deploying an ABM system within the context of Canadian participation in NORAD.

A change in the Liberal party leadership in 1968 resulted in Pierre Elliot Trudeau becoming Prime Minister of Canada. Prime Minister Trudeau had a very different view of Canadian foreign policy from that of Lester Pearson. His views on defence and foreign policy on becoming Prime Minister are best summed up in the following statement: "Trudeau complained that instead of a Canadian defence policy shaped by foreign policy, Canada's foreign policy was largely its policy in NATO, through NATO."⁴⁵ This view coupled with the belief that Canadian foreign policy ought to be more closely tied to Canadian national interests resulted in a wide ranging review of Canadian foreign and defence policy. The review produced a new set of priorities. "In descending order of importance Canada had as its aims

sovereignty, North American defence, NATO, and peacekeeping. The defence budget was frozen at \$1.8 billion, and the ships and aircraft on hand, already starting to run down, were not to be replaced with newer equipment."⁴⁶ It would seem that the freezing of the defence budget and lack of new equipment to carry out the new priorities of the Trudeau government spoke more to the issue of cutting back on defence in general rather than in establishing a new course.

The 1971 White Paper on Defence set forth the objectives of maintaining sovereignty, the defence of North America, a continuation of the NATO commitment, and a renewal of the commitment to United Nations peacekeeping missions. However, it also was a portent of things to come. The Bomarc missiles were to be retired at last. Canadian contribution to NORAD would continue to be comprised of CF-101 Voodoo interceptors armed with air-to-air nuclear missiles. The air force had cause to worry. The White Paper noted that the government was not prepared to devote substantial sums to new equipment or facilities for use only for active anti-bomber defences. Worse yet, it quite clearly implied that the very future of Canadian participation in NORAD was in question. By stating that when the NORAD agreement was to be renewed in 1973, the government signaled that it would act in response to the strategic situation extant. It was not a direct statement that NORAD's future was in doubt but it did reveal that the government was looking at alternatives.⁴⁷

Further refinement of the relationship was in evidence in

1973 at the next renewal. (Also see Appendix C). Due to major reviews of both foreign and defence policy undertaken by the Trudeau government, the NORAD agreement was extended for only a two year period. Despite the foreign policy and defence review and much rhetoric, the fact that the NORAD agreement was renewed speaks volumes. NORAD still provided Canada with increased security, enhanced Canadian sovereignty, at a cut rate price. Given the geographical location of the country, it was a certainty that Canada would suffer the consequences of any nuclear exchange between the United States and the Soviet Union. As such, there was a limit on how far it was possible to push the neutrality option. The short time span of the renewal was justified as it would give additional time to review the individual elements of a proposal for a modernized air defence system. Further joint consultations were required in order that the Canadian and American governments could consider and decide upon the extent of modernization that would satisfy future requirements for the joint defence of North America. There were many factors to be taken into account including the evolving strategic situation and developments in the Strategic Arms Limitation Talks.⁴⁸ The ground work for major revisions had been set. When the agreement was next renewed in 1975, significant changes in the scope of NORAD would be added.

As the Strategic Arms Limitations Talks [SALT] between the Soviet Union and the United States proceeded, it became apparent that it was undesirable for a widespread ABM system to be

deployed by either side. Canadian objections to the deployment of an ABM system had been noted during the 1968 renewal of the NORAD agreement and the clause added at that time foreclosed deployment of an ABM system on Canadian territory. Unfortunately, the United States decided to go it alone in response to the deployment of a Soviet ABM system around Moscow. The United States did not need Canada as a willing participant in an ABM system. "Canadian airspace was not needed for a U.S. ballistic missile defence, and Canadian space would be used without asking. A Spartan fired from the proposed Safeguard site in North Dakota could have intercepted an ICBM right over Diefenbaker's parliamentary district."⁴⁹

The United States and the Soviet Union were able to reach an agreement on the deployment of ABM defences. Deployment of ABMs was to be limited to two sites with a limit of 100 missiles in total. Not only did the agreement provide for the limitation of any current ABM deployment, but, it also banned the deployment of any ABM system that might be developed in the future. In 1974, the Soviet Union and the United States further modified their agreement on the deployment of an ABM system so that it was restricted to a single site. As a result, the Soviet Union ended up with an ABM system to protect Moscow and the United States deployed a limited ABM system in Grand Forks. "On 1 April 1975, exactly five years from the go-ahead, the Safeguard complex at Grand Forks, North Dakota, was operational. After twenty years of effort, America finally had a ballistic missile defence - but not

much of one: only 30 Spartans and 70 Sprints. It gave two layers of protection of the ICBM missile field at Grand Forks, and a single ultra thin layer of area protection of the Northern Plains, hardly the most valuable area of the United States."⁵⁰

1975 brought with it another renewal of the NORAD agreement. This time, significant changes were introduced in order to make NORAD responsive to the changing strategic situation. (See Appendix D). The first of several significant changes was to broaden the radar network around the continent. It committed each government to establish a joint civilian-military system to carry out surveillance and control in peacetime in conjunction with NORAD's air defence operations. This decision led to the creation of a U.S. Joint Surveillance System (JSS) radar network around the periphery of the country. In Canada, however, the proposed integration of civilian and military radars never took place.

The other major addition was far more significant in establishing a new direction for the operations of NORAD. It had become clear that the manned bomber threat was diminishing rapidly as the greatest threat now stemmed from an attack carried out by missiles. Once again, technology was having an effect on strategy thereby causing a shift in the orientation of NORAD. The new text formally recognized space surveillance as a legitimate dimension for NORAD's activities even though NORAD had been participating in this endeavor already. NORAD's basic aims were also changed, reflecting the new preoccupation with missiles rather than the bomber threat. The new emphasis for NORAD,

therefore, was on providing capabilities for warning of attack and for defence against air attack.⁵¹ While the detection of intruding aircraft was still an important function of NORAD, the interest in space surveillance had been formally added as a significant new function. In reality, the 1975 agreement merely formalized a function which had been in place and allowed for further expansion into this area. The Canadian aversion to participating in any form of an Anti-Ballistic Missile defence remained and the agreement was renewed for a five year period. These changes were merely the preliminary ground work for the next phase in NORAD's development. The late 1970s and early 80s were to see a renewed interest in air defence.

The superpower rivalry and the Cold War between the Soviet Union and the United States created NORAD. It is clear that the impetus for the formation of NORAD stems from these two factors. While NORAD was a product of this age, it remained relevant through adaptation to changing defence needs. Nevertheless, at some point a major revision to the organization and technological upgrade to the radar system was going to be required if NORAD was to cope with the new strategic and technological challenges which it would soon have to face.

Chapter 2 Footnotes

1. "A further obstacle to harmonious cooperation was the appalling ignorance, on the part of most Americans, of Canada and its history and traditions, an ignorance which still haunts Canadian-U.S. relations today." **Melvin Coñant.** The Long Polar Watch. (New York: Harper & Brothers, 1962), P.29.
2. **Joseph T. Jockel.** No Boundaries Upstairs. (Vancouver: University of British Columbia Press, 1987), p. 2.
3. Ibid.. P. 2.
4. The Long Polar Watch, Op. Cit.. P. 30.
5. No Boundaries Upstairs, Op.Cit.. P. 7.
6. The Long Polar Watch, Op. Cit.. P. 33.
7. In March 1946 the AAF did create an Air Defence Command (ADC) at Mitchell Field, New York.
No Boundaries Upstairs, Op. Cit.. P. 8.
8. Ibid.. P. 9
9. Ibid.. P. 18
10. Ibid.. P. 43.
11. Ibid.. P. 44.
12. The Long Polar Watch. Op. Cit.. P. 45.
13. Ibid.. P. 45.
14. No Boundaries Upstairs. Op. Cit.. P. 46.
15. Ibid.. P. 46.
16. Ibid.. P. 47.
17. Ibid.. P. 49.
18. Ibid.. P. 61.

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19. "It was semi-automatic in that intricate plotting and telling functions were run automatically, while tactical decisions, such as which fighter aircraft would fly where and which hostile aircraft they would attack, were left to human hands. By the end of the 1950's, SAGE equipment formed the electronic nervous systems of both the Canadian and U.S. air defence efforts." No Boundaries Upstairs. Op. Cit.. P. 62.
20. Sutherland, R. J. "The Strategic Significance of the Canadian Arctic." In R. St. J. Macdonald, ed. The Arctic Frontier. (Toronto: University of Toronto Press, 1966), P. 271.
21. No Boundaries Upstairs. Op. Cit.. P. 40.
22. Ibid.. P. 51-52.
23. Ibid.. P. 52.
24. Ibid.. P. 54.
25. Ibid.. P. 54-55.
26. Richard Morenus. Dew Line. (New York: Rand McNally & Company, 1957), P. 88.
27. No Boundaries Upstairs. Op. Cit.. P. 93.
28. Ibid.. P. 95.
29. Ibid.. P. 98.
30. Ibid.. P. 102-103.
31. The official name NORAD came into force in an indirect manner. "Within days, the two governments bowed to the inevitable and blurred the distinction between an integrated headquarters and a command. General Partridge, CINCONAD, was to become the new bi-national commander. Partridge complained in August 1957 about the awkwardness of the CINCADCANUS title and pointed out that there would be a new bi-national command located at Colorado Springs. His suggestion that his new organization be entitled the North American Air Defence Command (NORAD) and that he be designated CINCNORAD (while retaining the CINCONAD title for some U.S. purposes) was quietly approved by both governments." No Boundaries Upstairs. Op. Cit.. P. 107.

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- ³². Trevor Lloyd. Canada In World Affairs.
(Toronto: Oxford University Press, 1968), P. 26.
- ³³. The Avro Arrow was an aircraft which was being constructed by the A.V. Roe Company of Malton, Ontario. Their prior involvement in the development of the CF-100 had placed them in a position to design the next generation interceptor to meet RCAF requirements. As a Canadian design, the Arrow would have given Canada leading edge research and design capabilities as well as the more independent stance in both procurement of advanced weapons and their deployment which Diefenbaker desired. It was also thought at the time that the possibility for exporting this aircraft were quite good. Unfortunately, the Arrow was cancelled by Diefenbaker on the basis of cost. The program was prohibitively expensive and was thought to be unnecessary in light of the dawning of the missile age. "In September 1958 he announced that the Arrow contract would be 'reviewed' in six months, but the announcement was widely interpreted as warning that the program would be scrapped and, the six month delay as an adjustment period for Avro and its fourteen thousand employees." Apparently, autonomy in international affairs and defence policy have a price attached to them; a price which the government of the day chose not to pay.
Blair Fraser. The Search for Identity,
(Toronto: Doubleday, 1967), P. 191.
- ³⁴. The Long Polar Watch. Op. Cit.. P.156.
- ³⁵. Canada In World Affairs. Op. Cit.. P. 45.
- ³⁶. The Long Polar Watch, Op. Cit.. P. 95.
- ³⁷. Ibid.. P. 96.

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38. "It was Kennedy who publicly ridiculed Diefenbaker's ability to speak French. It was Kennedy who, to the Prime Minister's face, mocked one of Diefenbaker's chief sources of pride - his ability to fish. It was Kennedy who couldn't pronounce his name properly. It was Kennedy who, after being told privately by Diefenbaker that Canada was not interested in joining the Organization of American States, went over the head of the Prime Minister with a call to the Canadian public to join anyway. It was Kennedy who left behind a memorandum in Ottawa which did not, as legacy has it, refer to Diefenbaker as an S.O.B., but which was imperious and insulting in tone."
Lawrence Martin. The Presidents & The Prime Ministers.
(Toronto: Doubleday Canada Limited, 1982), P. 18-19.
39. Ibid... P. 199.
40. John G. Diefenbaker. One Canada: The Tumultuous Years 1962-67. (Toronto: Macmillan of Canada, 1977), P. 83.
41. Ibid... P. 199.
42. Ibid... P. 199.
43. James Eayrs. Northern Approaches.
(Toronto: The Macmillan Company of Canada Limited, 1961),
P.43.
44. J.L. Granatstein & Norman Hillmer. For Better Or For Worse.
(Toronto: Copp Clark Pitman Ltd., 1991), P. 239.
45. Ibid... P. 242.
46. Ibid... P. 243.
47. The Honourable Donald S. Macdonald. White Paper on Defence.
(Ottawa: Information Canada, 1971).
48. Report of the Standing Committee on External Affairs and National Defence. NORAD 1986. (Ottawa: House of Commons, 1986), P. 19.
49. B. Bruce-Briggs. The Shield of Faith.
(Toronto: Simon and Schuster, Inc., 1988), P. 322.
50. Ibid... P. 335.
51. NORAD 1986. Op. Cit... P. 20.

TECHNOLOGY, THE NORAD MISSION, AND
THE REBIRTH OF NORTH AMERICAN AIR DEFENCE

Chapter 3

With the renewed wariness exhibited by the Canadian public of all things military in the late 1970s, it was quite obvious that any government would have to be careful how it handled an important issue such as the renewal of NORAD. In addition, the renewal of NORAD was not an issue which the government of the day wanted to deal with during an election campaign which was forthcoming in 1979. Combined with this was the need to assess information gathered through a general review of continental air defence. The continuing debate in Canada on the merits of the NORAD relationship was the chief reason for the abbreviated term of the extension which took effect on May 12, 1980 for the period of a single year. (See Appendix E). The general review of air defence needs would take into account the many technological changes which had taken place and which necessitated that NORAD and its equipment be modernized to meet the new challenges.

In contrast to the very vocal public outcry against the military and the peace movement, NORAD continued to go about its business in a quiet manner. However, there was a new technological challenge to deal with. The advent of the Air Launched Cruise Missile (ALCM) and a new generation of bombers capable of carrying those cruise missiles was seen as a threat that the old NORAD radar systems could not cope with. It was only a matter of time before the Soviet Union perfected and deployed this technology. The radar network conceived in the 1950s had become obsolete.

Combined with the resurgence of the air breathing threat to

North America was the change of government in Canada. The incoming Progressive Conservative government of Prime Minister Brian Mulroney was elected in 1984 with a mandate to make a substantial number of changes across the board. The promise of placing a greater emphasis on defence issues and doing something about them was held out during the election campaign. One of the campaign promises made by Brian Mulroney was that a complete review of foreign and defence policy would be undertaken as soon as he and his party were elected. Furthermore, it was stated that Canada had a very special partnership with the United States and that things were going to change in this regard as well. The new government brought with it a different perspective on Canada - United States relations which was significantly warmer to the United States. As a result of this view, Canada - United States relations would become even more intertwined than previously.

TECHNOLOGY AND ITS CHALLENGES

As technology progresses, it alters the nature of warfare and creates new technological challenges which in turn spawn new responses. This cyclical pattern has been apparent throughout history. World War II saw major advances in aviation related technologies. With the development of long-range, jet-powered aircraft and guided missiles, warfare was raised to a new level. Nations were no longer isolated by virtue of distance alone. The possibility of intercontinental warfare acted as a catalyst for

the formation of NORAD. In turn, these developments created a new set of circumstances which needed to be countered by equally advanced technologies. Therefore, research related to radar and other surveillance type technologies quickly became a priority in order to counter the new long range airborne threats.

In response to the significant threat which had developed in the form of the Soviet Union, the United States and Canada founded NORAD on the idea that it was possible to defend against air breathing bombers by intercepting them and shooting them down. As a result, the retaliatory capability of the United States was protected. The retaliatory capability of the United States Strategic Air Command would be entrusted to act as a deterrent to the Soviet Union.

Air power has been seen as a vital component of any nation's defence measures. In fact, many regarded it as the ultimate form of defence. Even in its infancy, air power was recognized by both its proponents and its detractors as a revolutionary technology which would alter warfare. In an address at the Massachusetts Institute of Technology, Sir Winston Churchill stated; "For good or ill, air mastery is today the supreme expression of military power. And fleets, and armies, however necessary and important, must accept subordinate rank. This is a memorable milestone in the march of man."¹ However correct this statement was at the time, technology moves on. Different threats demand different solutions.

While air power in terms of conventionally powered air

breathing aircraft continues to be a significant force, it is the extension of that technology through the development of ballistic guided missiles that became the primary threat to the North American continent. NORAD had to evolve to meet this new threat to North America. With the advent of missiles, it was widely accepted that the threat from manned bombers was essentially eliminated. In fact, some would argue that the day of the manned bomber had come and gone. However, the creation of the cruise missile gave the manned bomber a new lease on life.

The resurgence in the air breathing threat is directly attributable to the development of cruise missiles. Cruise missiles are by their very nature relatively stealthy and difficult to defend against. A cruise missile represents the next stage of technological evolution in guided missile technology. It combines a terrain following radar with a missile capable of delivering either a conventional or nuclear payload to its target. As the missile is capable of following the terrain at very low altitude, it is capable of travelling across enemy territory without being detected. Cruise missiles are only vulnerable to detection by "look down" radars such as those carried aboard AWACS aircraft. Unfortunately, such radars and the accompanying AWACS aircraft are very expensive. In order to defend against bombers carrying ALCM's, it would be necessary to deploy a significant number of AWACS at an expense which is prohibitive. "What seems clear is that the cost-exchange ratio between ALCM-equipped, stand-off bomber offence and new

look-down/shoot-down defence definitely favours the former."²

The early 80s pointed to an imminent resurgence of the air breathing threat to the North American Continent which would necessitate the revamping of the existing air defence system. The Soviet Union had developed an ALCM with an even longer range than a similar weapon developed by the United States.

"Several Soviet models of a long-range cruise missile are undergoing development. According to American intelligence, the 'Bear-H' production line has been reactivated, probably to provide a launch platform for the new AS-15 ALCMs. The new supersonic 'Blackjack' bomber, which is substantially larger than the B-1B, may also be reaching production in the near future. Both the ALCM and the SLCM developed by Soviet researchers allegedly have a Terrain Contour Matching guidance system (TERCOM) like American cruise missiles."³

With these developments well underway, it was obvious to the Canadian and American military and civilian authorities that nothing less than a complete revision and upgrading of the existing air defence network would suffice.

TECHNOLOGY APPLIED

Technology in and of itself is interesting. However, without any purpose or application, it is meaningless except perhaps as an evolutionary and developmental step to a new level of technological expertise. As a result, in order to give meaning to technology, it is necessary to define the role that is to be played by that technology. Defence needs drive technological

development and innovation which in turn tends to create new needs. Technological solutions arise out of established needs and as a result of perceived threats to the security of North America. In the case of continental defence, there are several worthwhile missions which need to be accomplished.

In the late 70s and early 80s, a review of the air defence system and NORAD found that technology and strategy had moved far beyond what had been envisioned in the 1950s. Furthermore, the following areas of interest were specifically identified as legitimate problems with which NORAD had to contend. They are: airspace sovereignty, warning of air attack, defence against accidental launch, defence against terrorism, defence of Command, Control, Communications and Intelligence (C³I) systems, defence of strategically vital localized regions (also known as point defence), denying any aggressor an easy target, and comprehensive global defence based on Strategic Defence Initiative (SDI) technologies.

Airspace sovereignty is a key role of NORAD. The maintenance of airspace sovereignty is vital in order to maintain control over what goes on above a nation. It is necessary to be able to control the airspace so as to determine who is doing what, where, when and how. Interceptors are necessary for this mission as it requires the ability to intercept aircraft, identify them, and if it is determined that their intent is hostile, force them to land or shoot them down. In turn, radar systems, Airborne Warning and Control System (AWACS) aircraft, and C³I systems are required to

provide adequate early detection of intruding aircraft in order to give those interceptors the greatest chance to perform a successful intercept.

While it is unlikely that any major attack on the North American continent would be carried out by conventional bombers alone, the emergence of new systems such as Airborne Launched Cruise Missiles (ALCMs) and stealth technologies applied to a new generation of bomber aircraft (which carry ALCMs) increased the credibility of this threat. However, this was not the only threat to the security of North America.

When external threats to North America are discussed, the focus has always been on the Soviet Union. By only focusing on the Soviet Union, other everyday threats to the integrity of Canada and the United States were given a lower priority. During the late 1970s and throughout the first half of the 1980s, no one could have predicted the demise of the Soviet Union. The Soviet Union was the main focus of NORAD's efforts. Nevertheless, many other nations were already working on developing nuclear warfare technologies as well as the accompanying delivery vehicles. Although the priority afforded to the threat from nations other than the Soviet Union was low, it could not be ignored as a future consideration. The maintenance of airspace sovereignty was also of prime importance in order to keep out undesirable people, substances or devices in addition to denying passage to hostile aircraft. Terrorists, smugglers, and drug traffickers often employ aircraft to bring goods and people into

North America by surreptitious means.

NORAD's function in the provision of warning against air attack is also vital. It is an obvious function of NORAD. In order to provide adequate time for interception of intruding aircraft, it is necessary to be able to detect them. As such, surveillance is a key component in providing a warning of an impending air attack. When bombers were the key threat, response times were fairly lengthy. Intercontinental Ballistic Missiles (ICBMs) have greatly reduced the amount of time between the launch of a strike and actual impact. What is worse, Submarine Launched Ballistic Missiles (SLBMs) also exist. Enemy submarines can move into launch positions which are very close to the most vital targets. Their ability to station themselves off the Eastern seaboard and in the Canadian Arctic means that they can move their missiles much closer to their intended targets than was previously possible. Therefore, the amount of time available in which to react to an attack is also correspondingly shorter. As a result, it is desirable to have the capability to detect all launches, track them, and quickly ascertain whether they are routine or are part of a hostile act.

A warning of impending attack may serve to bolster the survival chances of aircraft which could be made airborne instead of being caught on the ground. Additionally, civil defence efforts to protect the population are greatly enhanced by early warning. It is a concession that under the current state of affairs, a warning of perhaps half an hour could not hope to

provide adequate time for the citizenry of any major urban area to do much in order to protect themselves. Therefore, it is crucial to maintain advanced detection capabilities in order to be able to detect and distinguish between what could be an accidental launch, a sneak attack, and a routine launch. Having the capability to distinguish between the different launches is also crucial in preventing an erroneous response on the basis of false information. It is only through early detection and analysis that sufficient retaliatory force could be brought to bear against any aggressor and thereby discourage the idea of a disarming first strike.

The mission of guarding against accidental launch is directly related to the ability to detect all launches and to distinguish between them. At some point in the near future, new missile technologies offer the hope of being able to defend against accidental launch by intercepting and destroying incoming missiles well away from their intended target. While there are many obstacles to producing and deploying an effective Ballistic Missile Defence [BMD] system, it is technologically feasible to proceed with research and development now. Were the perceived threat greater, the pressure to proceed with development and deployment would increase. Even so, the United States has not abandoned its efforts to develop an ABM system.⁴

Defence of C³I systems and facilities is crucial to the ability to mount a response to any aggression. Any defensive or offensive force is only as good as the command, control,

communications, and intelligence systems which can coordinate and support the actions of that force. The multitude of communication links and redundancies which need to be created and maintained to form an adequate C³I system are phenomenal. Without the ability to know what is going on, it is impossible to react to any given situation. Similarly, if the ability to communicate is destroyed, there is no possibility of mounting a cohesive response. Therefore, C³I systems are of strategic significance and would be considered primary targets in any attack.

Related to the defence of C³I systems is the defence of strategically vital regions. More commonly called point defence, this mission entails protecting specific designated points of strategic value. This would include such things as the aforementioned C³I systems and other key military installations and bases. Point defences are predicated upon the notion that certain installations are indispensable and must be protected at all costs. Without these installations, the ability to mount a response is significantly reduced or eliminated as the key installations have been neutralized.

One of the goals and functions of maintaining organizations such as NORAD is to deny any potential aggressor a free ride. This expression is often used to describe the act of giving a potential opponent a window of opportunity or weakness which can be exploited without any costs being incurred for having done so. While it is assumed that the greatest threat to North America

stems from hostile missiles whether they be ICBMs, ALCMs, and SLBMs, the development of new radar evading technologies coupled with ALCMs raises the potential threat credibility of the manned bomber. By maintaining sufficient defences against this type of threat, it is hoped that no point of vulnerability will be created which a potential aggressor could exploit. Generally, it is not wise to leave any potential aggressor an opening which is relatively easy to exploit. Furthermore, by denying a free ride to a potential attacker, a financial and resource toll is extracted from the potential attacker. Additionally, this mission is tied directly to the need for airspace sovereignty and denying any illegal penetration of the airspace over North America.

Comprehensive global defence has not yet been realized and some would argue that it is a goal which is unattainable. Based on both conventional existing technologies and the proposed Strategic Defence Initiative (SDI) technologies, this mission would entail the establishment of layers of defence which would extend an impermeable shield over the North American continent. Regardless of the mode of attack, a comprehensive defensive capability would be in place to deal with it. In paraphrasing General Robert Herres, the existing NORAD structure, which was revamped under the Air Defence Initiative [ADI], would serve as the walls and foundation for the roof of a comprehensive global defence erected under the SDI program. While the debate over the viability of SDI raged throughout the 1980s, research and development work continued. The possibility of creating an

impenetrable shield over North America and the obvious desirability of doing so does not eliminate the fact that deployment of such a system could be interpreted as a violation of the ABM (Anti-Ballistic Missile) Treaty.⁵ Nevertheless, if such a comprehensive defensive net could be erected over the North American continent, the temptation and pressure to do so would be overwhelming.

Finally, guarding against terrorism is a somewhat more nebulous goal. Although the North American continent had not been affected by terrorism to the same extent as Europe and the Middle East, it was a possibility that could not be ignored. Denying entry to terrorists and materiel necessary for the carrying out of terrorist acts is once again tied to the capability of being able to detect, intercept, and deal with any aircraft seeking illegal entry. It is conceivable that a terrorist organization could attempt to enter either Canada or the United States by air. After all, if the defence system were truly impenetrable, illegal drug shipments and so on would not routinely enter either country by this means. As an extension of this activity, people and weapons can also be brought into North America in a similar fashion.

THE REBIRTH AND REVITALIZATION OF AIR DEFENCE

Having recognized these defence missions, it was necessary to provide both manpower and equipment to deal with these needs. In

reviewing the implications of NORAD and outlining Canadian defence needs, SCEAND recognized the need for the modernization of the air defence system. However, the SCEAND report was not the first to recognize the general deterioration and technological obsolescence of the continent's air defence radar systems. When completed in 1979, the Joint United States Canada Air Defence Study (JUSCADS) found that the 1950s vintage technology employed in the air defence net of NORAD was obsolete and that as a result the airspace sovereignty mission of NORAD was significantly undermined. Given that the USSR had committed itself to a modernized bomber force capable of carrying ALCMs, the USAF defence planners drew up the ADMP (Air Defence Master Plan) which was predicated on the possibility of the USSR mounting a surprise precursor strike against C³I facilities.

Defence against conventional bombers had been allowed to deteriorate as the new focus was on the threat posed by ICBMs. Since there was no defence against ICBMs except surveillance to provide information so that a sneak attack could be countered, conventional defences had been allowed to lapse into a state of disrepair. After years of neglect, the Canadian interceptor fleet had become obsolete. The old Voodoo interceptors were not state of the art any longer and were in need of replacement. Their aging airframes had deteriorated significantly from use alone. Following a protracted competition, a suitable replacement was found. It was the American produced F-18 Hornet which was to be known in Canada as the CF-18 Hornet. The announcement of the

Hornet purchase was made by Minister of National Defence Gilles Lamontagne on the 10th of April, 1980. This aircraft was selected to replace the Voodoo in North America as part of the Canadian NORAD commitment.

As a result of the JUSCADS study and the ADMP, 1981 would prove to be a watershed year for NORAD. (See Appendix F). Formerly the acronym stood for North American Air Defence agreement. In the 1981 agreement, the name was changed to the North American Aerospace Defence agreement to reflect a new emphasis on detection of missiles and space borne weapons. The new accord noted the increasing usage of space for strategic and tactical purposes. In view of the increasing importance of space to the defence of North America, both Canada and the United States agreed to seek new ways to enhance cooperation in the surveillance of space and in the exchange of information on space events. The new agreement also expanded NORAD's primary objective from warning of attack and defence against air attack to include aerospace surveillance, warning and characterization of aerospace attack and defence against air attack. In addition to these significant changes, the Canadian objection of participation in the development and deployment of an ABM system was removed from the text of the accord. This deletion, some would say omission, is critical as it would open up a path for Canada to become involved in SDI research.

Spending on defence had been seen as excessive by Liberal Prime Minister Pierre Elliot Trudeau. The realization that the

primary threat to North America was from ICBMs rather than manned bombers brought with it a corresponding decrease in funds for an active air defence. Throughout the 1970s, defence spending and manpower dropped to new lows. Capital expenditures fell to eight percent of the defence budget while manpower levels declined from 101,000 in 1968 to 78,000 by 1976.⁶ After years of neglect and decreasing budgets, the Liberal government reversed itself and finally decided to give defence the attention it deserved. Major equipment acquisition programs were launched from 1978 onwards. In fact, much of the equipment purchased by the Liberals did not come into use until after the Conservative government of Prime Minister Brian Mulroney came to power in 1984.

Combined with the new technological challenges and the organizational changes at NORAD was a major change in Canadian politics which would alter Canada - United States relations yet again. The Canadian political scene was soon to be transformed by the election of a Progressive Conservative government in 1984 led by Brian Mulroney. This particular event is significant in that the new Prime Minister had a decidedly different view of Canada's place in world affairs. Unlike his predecessors, Brian Mulroney did not have an aversion to the United States. He had a definite view of where Canada ought to stand in relation to the United States and that was firmly in step with the United States. That view is best expressed in this statement: "Our pride in Canada should not obscure the hard realities of superpower existence. Nor should that pride give rise to illusions of influence, beyond

legitimate bounds, that can only disappoint and confuse."⁷

The arrival of Brian Mulroney on the political scene created a stir as the pre-election and campaign rhetoric promised a major changes in Canadian defence policy. During the Trudeau years, the United States had felt that Canada was getting a free ride and not spending enough on defence. According to a Pentagon report to Congress, when compared to other NATO countries, Canada was spending about half of what it should have been spending on defence.⁸ As a result of such underfunding, the capability to meet defence obligations was seriously eroded.

Upon the election of the Progressive Conservative government, the Speech from the Throne promised a thorough review of defence policy and a new White Paper on defence which would reflect the changes that had taken place since the last White Paper had been introduced in 1970. Given his views regarding Canada - United States relations, it would seem that the Prime Minister was intent on moving Canada further into the sphere of American influence.

Defence and defence related issues are seldom very prominent in Canadian politics. Nevertheless, defence issues took on added importance during the election campaign because the Progressive Conservatives sought to differentiate themselves from the New Democratic Party's long held policy position that Canada ought to withdraw from NATO and NORAD. Furthermore, the last White Paper on defence had been issued some fifteen years previously and it was quite clear that a review was long overdue. The previous

government had left behind a mess of obsolete equipment and a force somewhat in disarray. Worse yet, because of the continued under funding and neglect of defence, Canada was accepting a free ride on the backs of its American and European allies.⁹ While the outgoing Liberal administration had realized that much of the equipment had become obsolete and was in need of replacement, the majority of their efforts to procure new equipment would not see fruition until they were already out of office.

The following statement issued by Brian Mulroney during the election campaign is typical of the rhetoric employed to lambaste the previous government's defence spending habits:

"Pierre Trudeau and his Liberal pals have done the ultimate disservice to Canada by running down our armed forces to the point where we spend less per capita of GNP on our armed forces than any other country in the Western alliance with the exception of Luxembourg.

This is unacceptable! This is a first-class country, and we're going to go first class in the area of conventional defence under a new Progressive Conservative government. We are not going to ask men and women to represent the honor of Canada in third-rate ships, in fourth-rate aircraft and in tanks that are 28 years old. We are going to do it first class - first class equipment, deployment capacity and first class wages - those are the conditions under which they're going to represent Canada.

And I think in doing that, then we've paid our own freight to NATO and to NORAD and we have the respect and trust of our allies. That enables us to make pretty substantial strides in the area of peace negotiations when we come to the table to talk."¹⁰

While Canada proceeded with a general review of defence policy, other events were taking place which arose as the result of the conclusions and recommendations reached by JUSCADS.

Central among these was the Air Defence Initiative (ADI) modernization program. Considered as an affordable and necessary measure, air defence modernization as outlined by the ADMP was incorporated into the overall strategic modernization programme launched by the Reagan administration. The previous Canadian government concurred with this decision and had accepted the ADMP in 1982 as a blueprint for the complete overhaul of North American air defences. Negotiations on the ADMP proved successful and resulted in Prime Minister Mulroney and President Reagan signing an agreement for the joint modernization of air defences at their meeting in March 1985. (See Appendix G). Dubbed as the Shamrock Summit, the meeting between the two leaders formalized the revamping of North American air defence forces.

As part of the air defence modernization plan, both Canada and the United States made a commitment to close the gaps that existed in the radar defence network which encircles the periphery of the continent. The DEW line radar installations had been identified as severely lacking. Speaking before the proceedings of the Special Committee of the Senate on National Defence, Lieutenant General (retired) K.E. Lewis, former Deputy Commander of NORAD, expressed his concern over the deteriorating capabilities of NORAD to detect hostile aircraft. "The systems that NORAD now has in place permit very reliable and early indications of missile launch and the direction of launch but in the last couple of decades we have allowed our atmospheric defences to deteriorate to the point where we believe that we

might provide an option to potential enemy planners to, in fact, use that out-dated weapon."¹¹ Further submissions given before the Special Committee of the Senate on National Defence by Professor Douglas A. Ross pointed out the desirability of the North Warning System [NWS]. Professor Ross states:

"I think the northern warning system, NWS, which I believe the Canadian forces are proposing at the moment for the far north, the B.C. coast, the Yukon coast and the Labrador extension would be adequate to cope with a precursor strike, because it is in that scenario that we are taking some insurance against a limited Soviet bomber force striking at American command and control systems. That, I think, is about the only contingency against which we should buy insurance for continental defence...If one is trying to reduce the risk of accidental war...the precursor threat must be addressed... For that reason...we need an upgrading of our warning system ...If there were no radar perimeter, then that obviously would be an option they would have. One wants to foreclose that."¹²

The decision to go ahead with the NWS took place prior to the release of the long awaited White Paper on Defence. Nevertheless, the NWS, which was to be built jointly by the United States and Canada, was to be the centerpiece of a renewed commitment to air defence and surveillance. It also signalled a greater willingness on the part of Canada to accept a larger share of the burden. The funding of the construction of the NWS was a break from previous tradition whereby Canada was responsible for a third of the cost. Canada was apportioned the sum of \$511 million versus \$777 million to the United States.¹³ In funding the NWS, Canada assumed a much greater proportion of the total cost than was previously the case.

Defence related issues took on additional importance in 1985 with a revival of a challenge to Canadian sovereignty in the Arctic by the United States. An oil tanker called Manhattan had aroused Canadian sensitivity over control of the Northwest Passage and by extension the entire Arctic Archipelago in 1969 by passing through without Canadian approval. The Northwest Passage had been regarded by Canada as internal waters while the United States regarded this passage as an international strait. A similar occurrence took place in the summer of 1985 when a United States Coast Guard Icebreaker called the Polar Sea sailed through the Northwest Passage. The only real difference between the two events was that in 1985 the United States informed the Canadian Government of its intentions before proceeding and the Canadian Government gave its consent. Given that there was no way to prevent the United States from proceeding, the challenge to Canadian sovereignty was fairly explicit. Without considerable outlay in new equipment, Canadian ability to exercise control over this territory was severely hampered. This event would have an impact on the forthcoming White Paper on Defence as it would serve as a catalyst in pushing domestic security and sovereignty concerns to the forefront.

Having completed a comprehensive review of Canadian defence needs and requirements, the White Paper on Defence was tabled by Minister of National Defence Perrin Beatty on the fifth of June, 1987. This document was eagerly awaited as the last White Paper had been released some 16 years earlier. Given that many changes

had taken place since 1971, the Minister of National Defence in tabling the White Paper noted some fundamental deficiencies in defence policy. It was noted that a significant gap existed in the capabilities of the armed forces and their ability to fulfil the requirements and variety of roles that successive governments had undertaken. Furthermore, the equipment that the armed forces were utilizing was either obsolete or quickly becoming obsolete. The Arctic Ocean was singled out as a security and sovereignty concern due to the fact that foreign vessels and submarines were regularly operating in this region. Worse yet, advances in Soviet ALCM and SLCM technology was cause for concern. Canada's commitment to NORAD was reaffirmed as well through the provision of three squadrons of tactical fighters and continued sharing of crew duties of AWACS aircraft which were utilized in support of NORAD duties. Canadian crews had been involved in AWACS operations since 1978. Most importantly, the Defence Minister echoed the sentiments of the Prime Minister in that Canada had to be a responsible partner in defence of her own territory and not a dependent.

The views of Prime Minister Mulroney were clearly spelled out in the White Paper itself. He states:

"Our commitments reflect a sober recognition that Canada's survival and prosperity depend not only on what we do at home but on the well-being and security of the West as a whole. This White Paper responds to this reality by upgrading and consolidating our efforts to meet present circumstances and those of the future, into the next century.

But just as the Alliance can only prosper through shared effort and a common impulse, so too Canada must look to itself to safeguard its sovereignty and pursue its own interests. Only we as a nation should decide what must be done to protect our shores, our waters and our airspace. This White Paper, therefore, takes as its first priority the protection and furtherance of Canada's sovereignty as a nation."¹⁴

The White Paper goes on to describe a series of policy positions which were designed to strengthen Canadian sovereignty while implementing the ADI modernization program. Under the ADI program, the obsolescent DEW Line of radar systems was to be replaced by the North Warning System. Various improvements were to be implemented to five airfields which were designated as Forward Operating Locations (FOL) for use by the CF-18s and other aircraft. Additional support for Airborne Warning and Control System (AWACS) aircraft was to come from an increased contingent of Canadian crew members. Also, improved ground support facilities for AWACS aircraft were to be made available at a number of sites which were designated as Dispersed Operating Bases (DOB).

It seems that every area of Canadian defence policy was up for review. The resulting policies would affect all of the services. It would seem that this Prime Minister and this government were serious about their commitment to revitalize the armed forces and to take on a greater share of the defence burden instead of relying on the assistance of the United States. As such, it could be expected that a desire to do more and to take on a greater share of the defence burden would be translated into

greater outlays of funds and greater staffing of the NORAD function. Unfortunately, it appears that there has not been any difference between the Mulroney regime and that of Pierre Elliot Trudeau. As the funding data presented in the following chapter will reveal, the Canadian percentage share actually declined during the Mulroney years. It appears that much of the difference between the two Prime Ministers as far as defence policy was concerned was in style and rhetoric rather than in substance.¹⁵

NORAD has worked well in practice. In its present incarnation, NORAD consists of three regions. The three regions are comprised of the contiguous United States, Canada, and Alaska. The Canadian contribution to NORAD includes radar stations, personnel, and aircraft. The commander of the Fighter Group is also the commander of the Canadian NORAD region. With its headquarters at North Bay, the Canadian NORAD region is responsible for the operational control of air defence forces in Canada and for the sovereignty and defence of all Canadian airspace. Regional responsibilities are exercised from the Canada East and Canada West Regional Operations Control Centers (ROCCs) located in an underground complex at North Bay. Data and selected information feeds from CFB (Canadian Forces Base) North Bay to NORAD headquarters located at Colorado Springs.

In addition to CFB North Bay, the Canadian contingent is now comprised of two CF-18 fighter squadrons. They are 441 Tactical Fighter Squadron and 425 Tactical Fighter Squadron based at CFB Cold Lake, Alberta and CFB Bagotville, Quebec respectively.

Squadrons which served in Europe have further increased this contingent as they have been brought back to Canada. 414

Electronic Squadron is located at CFB Comox and is equipped with CC-117 Falcon, CT-133 Silver Star, and CC-144 Challenger aircraft and provides training for the ground radar system and the manned interceptor force. In addition to the provision of aircraft, Canada contributes personnel for the operation and support of equipment which fulfils the NORAD mission both in Canada and the United States. Canadian forces personnel provide manpower at NORAD units located at Tinker AFB (Air Force Base), Oklahoma, Langley AFB, Virginia, Bangor ANGB (Air National Guard Base), Maine, Mountain Home AFB, Idaho, Tyndall AFB, Florida, McChord AFB, Washington, Griffiss AFB, New York, Elmendorf AFB, Arkansas, and at Peterson AFB, Colorado which is also NORAD headquarters.

As part of the space surveillance and missile warning function of NORAD, Canada contributed one satellite tracking station at St. Margarets, New Brunswick, which was closed in 1986. Canadian personnel in support of the surveillance and missile warning function of NORAD are based at Cape Cod AFS, Massachussets, Thule Air Base, Greenland, Clear AFS, Arkansas, Maui, Hawaii, Cavalier AFS, North Dakota, Eldorado AFS, Texas, Beale AFB, California, and at Colorado Springs, Colorado.

Canadian personnel are also employed in providing operational support for NORAD AWACS (Airborne Warning and Control System) aircraft and in the manning of the older radar network which comprised the obsolescent CADIN/Pinetree line. As part of the air

defence modernization program, Canadian personnel were to have been assigned to assist in the manning of the new OTH-B (Over The Horizon - Backscatter) radar systems. However, the OTH-B radar system has been mothballed. Additional improvements to the defence of North America have come about as a result of the upgrading and replacement of the DEW line radar network by the North Warning System (NWS) under ADI.

Additional improvements under ADI to airfields in the northern reaches of Canada provide for the operation of fighter aircraft from Forward Operating Locations [FOLs]. Improvements have been made to the following airfields: Inuvik, Yellowknife, Rankin Inlet, Iqaluit in the North West Territories and at Kuujuaq in Quebec. To facilitate AWACS operations and to provide Dispersed Operational Bases [DOBs] for these aircraft, CFB Edmonton and CFB Bagotville have received some upgrading. As a result of all of the changes brought forth by ADI, NORAD can be considered relevant once again.

Chapter 3 Footnotes

1. M. J. Armitage and R. A. Mason, Air Power In The Nuclear Age. (Chicago: University of Illinois Press, 1985), P. 1.
2. John Barrett and Douglas Ross. "The Air-Launched Cruise Missile and Canadian Arms Control Policy." Canadian Public Policy. December 1985. Vol. 11. P.714
3. Ibid., P. 714.
4. "A key development in the military space arena is the repackaging of the Strategic Defence Initiative (SDI) or Star Wars, as the Ballistic Missile Defence Organization (BMDO). Defense Secretary Les Aspin shifted the program's focus away from space-based destruction of tactical missiles to ground-based interception of tactical missiles, such as the Scuds used by Iraq in the Persian Gulf war. The BMDO is still handsomely funded, with a \$3.8 billion budget for fiscal year 1993. SDI research projects consumed a total of nearly \$30 billion since the program was established by Ronald Reagan." Stuart F. Brown. "The Military In Space". Popular Science, August 1993, P. 72.
5. See Appendix I and "SCEAND Report on NORAD." Arms Control Chronicle, Number 13, January - February 1986, The Canadian Centre for Arms Control and Disarmament.
6. R. B. Byers. "Canadian Security and Defence: The Legacy and the Challenges." Adelphi Papers 214 (Winter 1986), P. 86-87.
7. Rae Murphy, Robert Chodos, and Nick Auf der Maur. Brian Mulroney. (Toronto: James Lorimer & Company, 1986), P. 212.
8. Report on Allied Contributions to the Common Defense. (Washington: Department of Defense, March 1986), P. 18-23.
9. Joseph T. Jockel and Joel J. Sokolsky. Canada and Collective Security: Odd Man Out. (NewYork: Praeger, 1986), P.11.
10. Joel J. Sokolsky. "Changing Strategies, Technologies and Organization: The Continuing Debate on NORAD and the Strategic Defence Initiative." Canadian Journal of Political Science, VOL. XIX No. 4, December 1986. P. 760.
11. Lieutenant General K.E. Lewis (Retired). Proceedings of the Special Committee of the Senate on National Defence, 1 February 1984. P. 1:21.

Chapter 3 Footnotes

12. *Professor Douglas A. Ross. Proceedings of the Special Committee of the Senate on National Defence, 8 March 1984. P. 3:27-3:28.*
13. *The Air-Launched Cruise Missile and Canadian Arms Control Policy. Op. Cit. P. 723.*
14. *Challenge And Commitment: A Defence Policy For Canada. (Ottawa: National Defence, 1987), P. II.*
15. "Unlike its predecessors, the government seemed inclined to give high priority to reinforcing the country's existing defence commitments by providing additional forces and equipment. Like its predecessors, the government ultimately let the Finance Department run the military, as budgetary considerations placed a close check on significant increases in defence spending. As two critics noted, 'except on the rhetorical level, there has been little real difference between the defence policy of the Progressive Conservative government and the one pursued by Pierre Trudeau as he left office in mid-1984.'
Tom Keating. Canada And World Order.
(Toronto: McClelland & Stewart, 1993), P. 219.

NORAD FUNDING AND STAFFING

Chapter 4

Canadian participation in NORAD has been predicated on the basis of NORAD providing a cost effective solution to a defence problem. As has been pointed out previously, Canada has been responsible for one third of all costs associated with the construction and installation of the various radar networks with the exception of the North Warning System where Canada funded 40% of the construction costs. If the broader picture is taken into account, the NWS was part and parcel of the ADI modernization program. In terms of the NORAD annual operating budget, Canada has traditionally contributed 10%. As a result, Canada has been able to derive a great deal of benefit from participating in NORAD at a minimal expenditure. Outside the sphere of individuals who regularly think about such things, spending on the military is often seen as excessive, and particularly so in the present context as the major potential threat to the security of North America has disappeared. Therefore, it would seem that it is possible to reduce the amount of funding for military expenditures. This situation seems to be a complete reversal of the situation which existed in the late 70s and early 80s which necessitated increased spending on air defence. However, when a thorough examination of spending on air defence is undertaken it becomes apparent that there are no savings to be realized due to the end of the Cold War. In order to be able to cut back on spending, there has to have been a significant outlay beyond what was a fair apportionment to begin with.

A renewed interest in NORAD and air defence during the late

1970s produced changes in the NORAD agreement and in the air defence system which became evident throughout the 1980s. The indicators of manpower allotment and budgetary appropriation towards the operation of NORAD show growth over the past decade. Much of this growth in staffing and budgetary appropriation can be directly attributed to the attempts at modernizing the existing air defence system under the Air Defence Initiative.

As discussed previously, the ADI was implemented in order to close the gaps in the existing air defence system as well as to make the air defence system concurrent with existing technology and strategy. An air defence system planned and constructed in the 1950s could not hope to be anything but obsolete in 1980. Modernization under the ADI sought to meet the challenges posed by what appeared to be a revitalized bomber threat due to the development of stealth technology and the deployment of air launched cruise missiles (ALCM). (See Appendix G). Despite the renewed interest in air defence, space and space based defence continued to dominate NORAD and continental defence planning. This was evident as the United States placed a lower priority on the intercept mission of NORAD and transferred this role from regular USAF interceptor squadrons to Air National Guard squadrons.

Funding and staffing of any endeavor is a better indicator of support for that particular activity than any statement made by any elected official. Nevertheless, there is ample evidence of verbal support for maintaining a credible military capability for

the defence of Canada. In the midst of negotiations for the ADI modernization agreement, Prime Minister Brian Mulroney stated: "We must realize that our sovereignty and territorial integrity cannot be safeguarded by mere proclamation or protest....We require a military capacity to respond to the threats posed by clandestine incursions into our waters, or probes of our airspace. This is not a question of political expedience or choice. It is a question of responsible national policy."¹ (Also see Appendix H). Despite these pronouncements, the reality of the situation is quite different from that espoused by the Prime Minister. If this statement was taken at face value, it would suggest an increase in spending on air defence which should be visible by examining NORAD funding data.

One of the main reasons Canada participates in NORAD is the fact that cooperation is cost effective. It would be significantly more expensive to accomplish this task alone. Under most cost sharing arrangements between Canada and the United States where NORAD has been involved, the breakdown in funding has recognized the differences in population size and ability to fund this activity. Even though the population of Canada is about 10% of the size of the United States, the Canadian share of the burden for major capital expenditures has usually amounted to a third of the total cost. However, the annual funding of operational expenditures has traditionally been 10% of the total.

In The Logic of Collective Action, Mancur Olson writes: "In small groups there may very well be some voluntary action in

support of the common purposes of the individuals in the group, but in most cases this action will cease before it reaches the optimal level for the members of the group as a whole. In the sharing of the costs of efforts to achieve a common goal in small groups, there is however a surprising tendency for the exploitation of the great by the small."² In the case of NORAD funding, this appears to be the case, and particularly so when the Mulroney record is examined. As there are no mechanisms for regulating the annual contribution in support of NORAD activities or for enforcing the collection of funds dedicated to this task, it is left up to the discretion of the Canadian government of the day to decide how much it will contribute.

Part of the problem lies in the fact that many of the benefits of the NORAD partnership can be considered public goods.³ According to public goods theory, a public good is something which once produced can be shared by any member of the group regardless of whether or not that member has contributed to paying for that good. Furthermore, when the benefits of providing a particular public good are deemed to be of such significance for one partner that the cost of doing so becomes irrelevant, the other partners in an organization can rest assured that this good will continue to be provided regardless of their contribution to the provision of this good. In the sense that the United States would continue to fund NORAD and carry on the activities that NORAD currently undertakes in any event, it is possible for Canada to take advantage of these public goods without providing

the optimal level of funding to obtain them.

Similarly, the nature of Canadian participation in NORAD is a difficult one to discern correctly. In some respects this participation is involuntary as there are factors which conspire to keep Canada in NORAD. The obvious factors of cost and necessity of approaching air defence from a continentalist perspective assure Canadian participation in NORAD. As a result of this assured participation in NORAD, Canadian participation can be characterized as involuntary. Members of a group that are participating in an obligatory or involuntary manner do not tend to contribute to the same extent as those who are participating in a voluntary manner. It is important to remember that in this particular instance, the characterization of Canadian participation in NORAD as involuntary is relative to the reasons for that involuntary participation.

Contribution to the provision of a collective good is relative to the necessity of doing so. The goods or services that NORAD provides would exist in any event, which makes it virtually irrelevant whether or not Canada contributes to the provision of these services. The United States would continue the activities that it currently undertakes regardless of whether or not Canada participates in them as they contribute to the security of the United States. Since most threats to the security of Canada are also a threat to the security of the United States, the United States would be forced to act out of its own self interest. It would be possible for Canada to contribute nothing to the

maintenance of NORAD and still receive many of the benefits.

In reality however, some contribution is required in order to maintain membership in the group and in order to obtain certain goods which would not be available otherwise. Goods which are not otherwise available such as surveillance and tracking data act as the incentive for continued funding of NORAD by Canada as does the ability to moderate and influence United States policy. Nevertheless, in small groups there exists a disincentive for the weaker member to contribute more than minimally required. NORAD funding data appears to support the premise that the depth of commitment is proportional to the benefits derived from the relationship and whether or not the goods arising out of that relationship will continue to be provided should the relationship be dissolved. As a result, it can be said that Canadian funding of NORAD follows a predictable path. It is sufficient so that the group relationship is maintained, yet it is not optimal. Canada can maintain the lowest possible funding necessary while still deriving the benefits of the partnership.

Gauging the depth of commitment to NORAD and air defence in general is difficult as there are very few reliable criteria on which to base an evaluation. There are many factors which are difficult if not impossible to define. For example, how does one measure the value of a particular service or good to a particular nation except in relative terms which are not readily quantifiable? Looking at statements made by politicians is not a reliable indicator. Funding data are much more reliable indicator

of a government's priorities. It offers a look at the changes in funding from year to year on any given activity and it can be presumed that if a government is spending more on a particular activity that it is placing a greater emphasis on that activity. The opposite can also be said to be true.

It is often difficult to obtain funding data for certain activities. In the case of air defence funding by the United States and Canada, much of the data relating to NORAD, Air Command, and the USAF are not readily available. The only source for NORAD funding information is NORAD itself. It is very interesting that NORAD does not appear as a separate line item in any United States budget. Similarly, it is odd that Canadian NORAD funding data is unavailable in Canada through any of the normal channels. Data related to the staffing and funding of NORAD is available from NORAD by written request which specifies the usage of this information. A detailed breakdown of the funding and staffing data is unavailable. Data relating to the staffing and funding of Air Command and the USAF are available from a variety of sources. Primarily, it is a composite of data available from the annual budgets and estimates of the respective countries. In this area, it is often difficult to get accurate numbers as the method of calculating the aggregate changes from year to year. National security considerations also create difficulties in getting meaningful figures. Nevertheless, it is possible to arrive at a composite figure for each year.

The time period which is most relevant to this study is from

1980 to 1991. This particular period is significant in that the 1980s signify the rebirth of NORAD and the modernization of the system through the ADI to deal with contemporary threats.

Furthermore, this period is notable for the pronouncement that Canada was prepared to contribute more to her own defence and to the alliances which maintained Canadian security. As such, if the funding and staffing of NORAD increased throughout this period, then it can be said that the pronouncements that Canada was prepared to do more were more than just platitudes.

When funding for NORAD is compared by country it is readily apparent that the United States is responsible for the bulk of the funding. As Table 1 reveals, the United States funding of NORAD hovered around 90% for the decade. In fact, the 11 year average is 91.72%. What is more surprising is that the Canadian contribution actually decreased from 1984 and onwards subsequent to the election of Brian Mulroney. In a similar vein, Graph 1 reveals that not only did the United States provide the bulk of the funding for NORAD but also that there was significant growth in the funding of NORAD by the United States throughout the 1980s.

While the operational costs do not show the promised increase in funding, cooperation on major capital expenditures such as the North Warning System showed a new willingness to take on more of the financial burden. The NWS costs were divided along a 60%/40% split with the United States assuming the greater burden. Of the endeavors undertaken under ADI, this one is the most costly.

Table 1

NORAD FUNDING

1980 - 1990

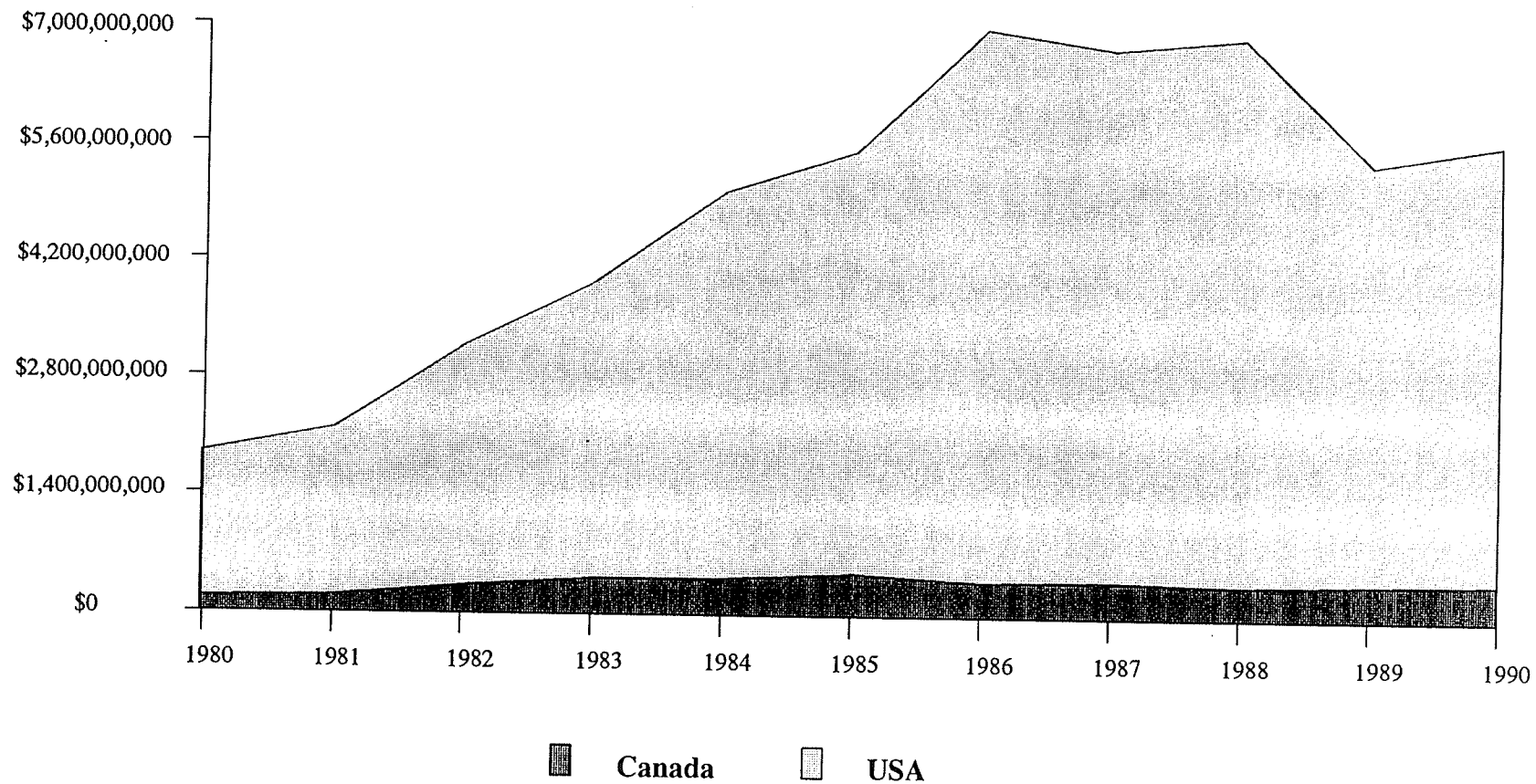
<u>YEAR</u>	<u>US \$</u>	<u>US %</u>	<u>CANADA \$</u>	<u>CANADA %</u>
1980	1,709	90.2	185	9.8
1981	1,980	90.7	203	9.3
1982	2,842	89.7	328	10.3
1983	3,522	89.2	426	10.8
1984	4,615	91.5	431.6	8.5
1985	5,036	90.9	503	9.1
1986	6,599	94.2	407	5.8
1987	6,340	93.6	431	6.4
1988	6,538	94.3	393	5.7
1989	5,018	92.3	416	7.7
1990	5,253	92.3	437	7.7

NOTE: All figures in millions of 1990 US dollars (\$)

Source: *NORAD*

NORAD Funding

1990 US Dollars



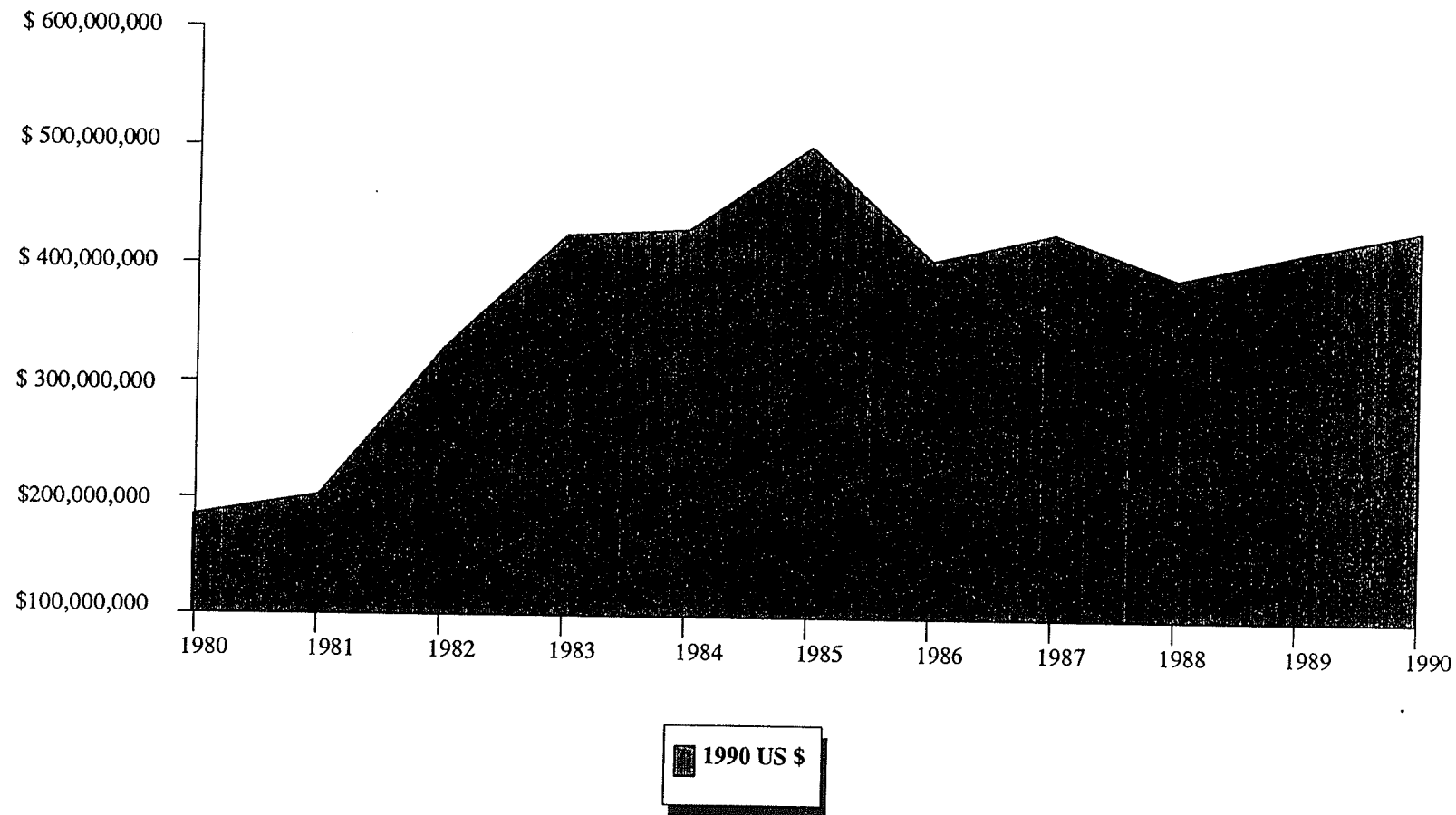
Graph 1

Source: NORAD

In marked contrast, the Canadian example reveals an 11 year average of 8.28%. Similarly, the profile in Graph 1 reveals the disparity between the funding of NORAD by the United States and Canada. The relatively flat and stable amount of funding for NORAD by Canada throughout the 1980s is somewhat deceptive. There appears to have been some growth as the gently swollen peak of 1985 indicates. However, as Table 1 indicates, while the overall amount of funding by Canada increased through the first half of the decade, the actual percentage share of funding decreased throughout the second half.

If the two countries spending on NORAD is juxtaposed as in Graph 1, the Canadian example tends to appear flattened due to the significantly larger amount of funding that is provided by the United States. However, when Canadian funding of NORAD is shown in isolation as in Graph 2, a different picture emerges. Throughout the 70s, according to the Canadian Department of National Defence, funding for NORAD was fairly stable and averaged 200 million (in 1990 dollars). The 1980s reveal a marked increase in the funding of NORAD by Canada. Again, the increased funding seems to have hit a peak in 1985 and more or less leveled off at that point. Taken in isolation, the United States example presented in Graph 3 reveals a marked increase in funding throughout the early to mid 1980s with a plateau of sorts having been reached in the 1986 to 1988 time span. The growth in NORAD funding throughout the 1980s on the part of both nations seems to be attributable to the ADI modernization program.

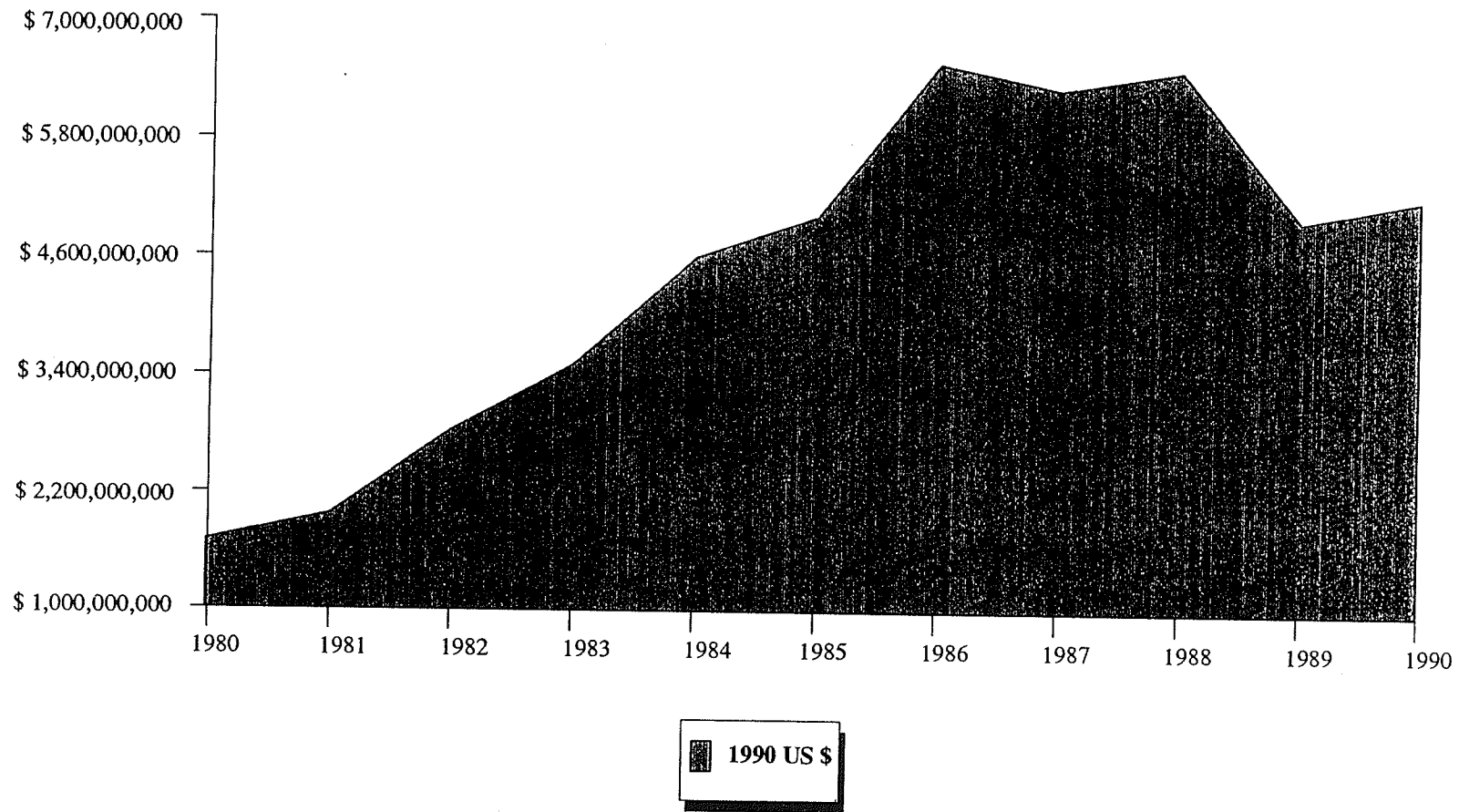
Canadian NORAD Funding



Graph 2

Source: *NORAD*

USA NORAD Funding



Graph 3

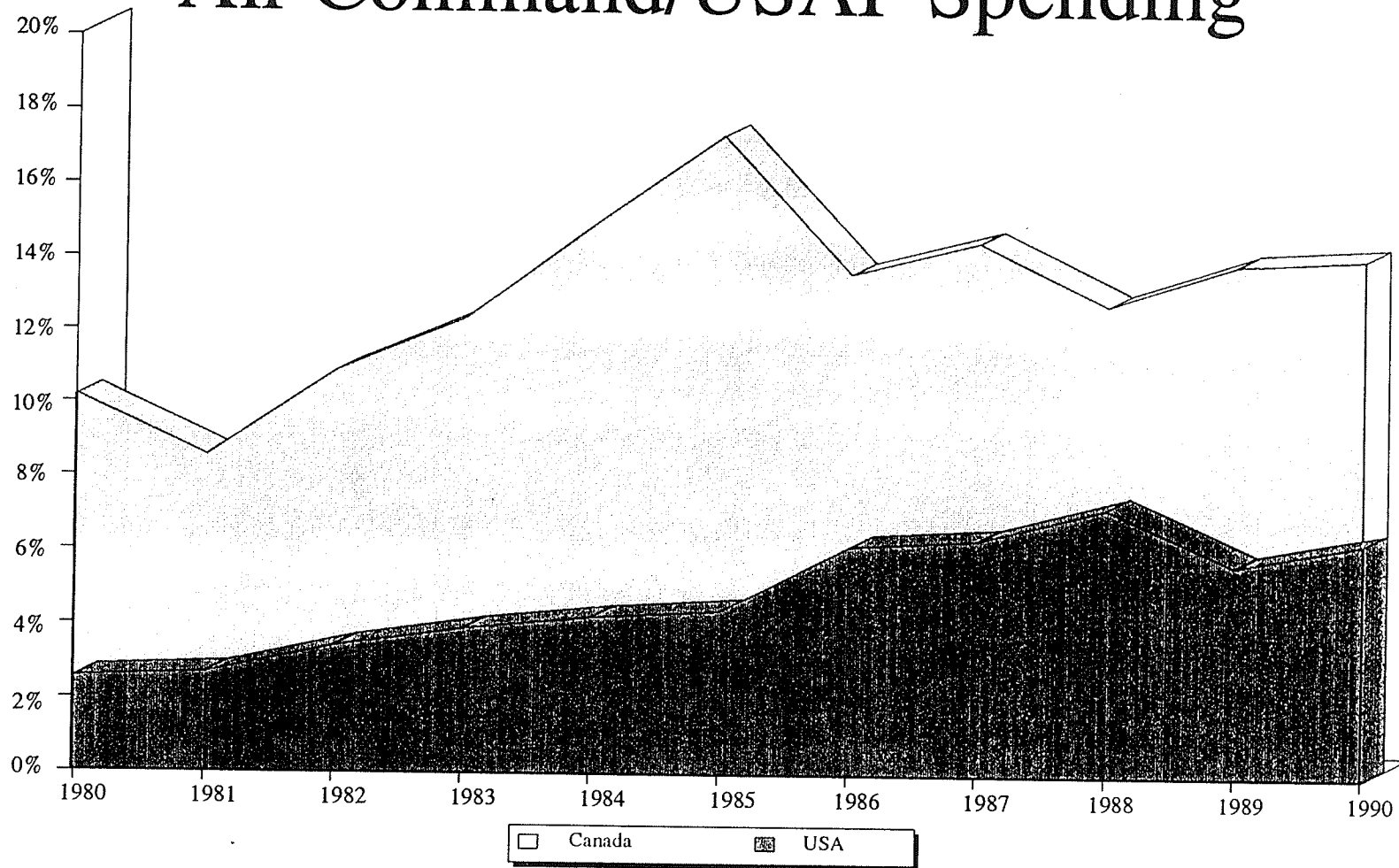
Source: *NORAD*

When contrasting NORAD funding by country as a proportion of overall budgetary allotment to the respective air services a slightly different picture emerges. (See Graph 4) It is immediately apparent that NORAD consumes a proportionately larger share of the Air Command budgetary allotment in the Canadian example. NORAD consumes proportionally less of the USAF budget. This is an indication of the differing situations in place in Canada and the United States.

For Canada, NORAD is a major undertaking. The United States spends significantly more on defence than does Canada and NORAD represents a very small fraction of that total expenditure. Nevertheless, as Graph 4 illustrates, NORAD accounted for a greater share of the air service budget in both countries throughout the 1980s. It is interesting to note that the Canadian example reveals the bulk of the growth during the first half of the decade while the American example reveals the bulk of the growth during the later part of the decade. This can be explained in part by the fact that the majority of the work on the NWS was accomplished during the second half of the decade with the United States assuming the greater responsibility in that instance.

When it comes to providing manpower for the daily operation of NORAD, there is an imbalance as well. However, in this category, there is a surprise. (See Table 2). During the time period of 1980 through 1983 Canadian personnel stationed in the United States actually outnumbered American personnel devoted to

NORAD Funding As A % Of Air Command/USAF Spending



Graph 4

Source: *NORAD*

Personnel Under CINCNORAD

US Forces

Canadian Forces

Year	In US	In Canada	Sub Total	In US	In Canada	Sub Total	TOTAL
1980	130	0	130	174	223	397	527
1981	116	0	116	174	223	397	513
1982	115	0	115	130	339	469	584
1983	114	0	114	118	339	457	571
1984	124	0	124	115	339	454	578
1985	123	1	124	116	325	441	565
1986	454	56	510	120	327	447	957
1987	399	2	401	120	327	447	848
1988	304	2	306	141	323	464	770
1989	303	2	305	140	323	463	768
1990	319	2	321	143	596	739	1060
1991	318	2	320	143	596	739	1059

Table 2

Source: *NORAD*

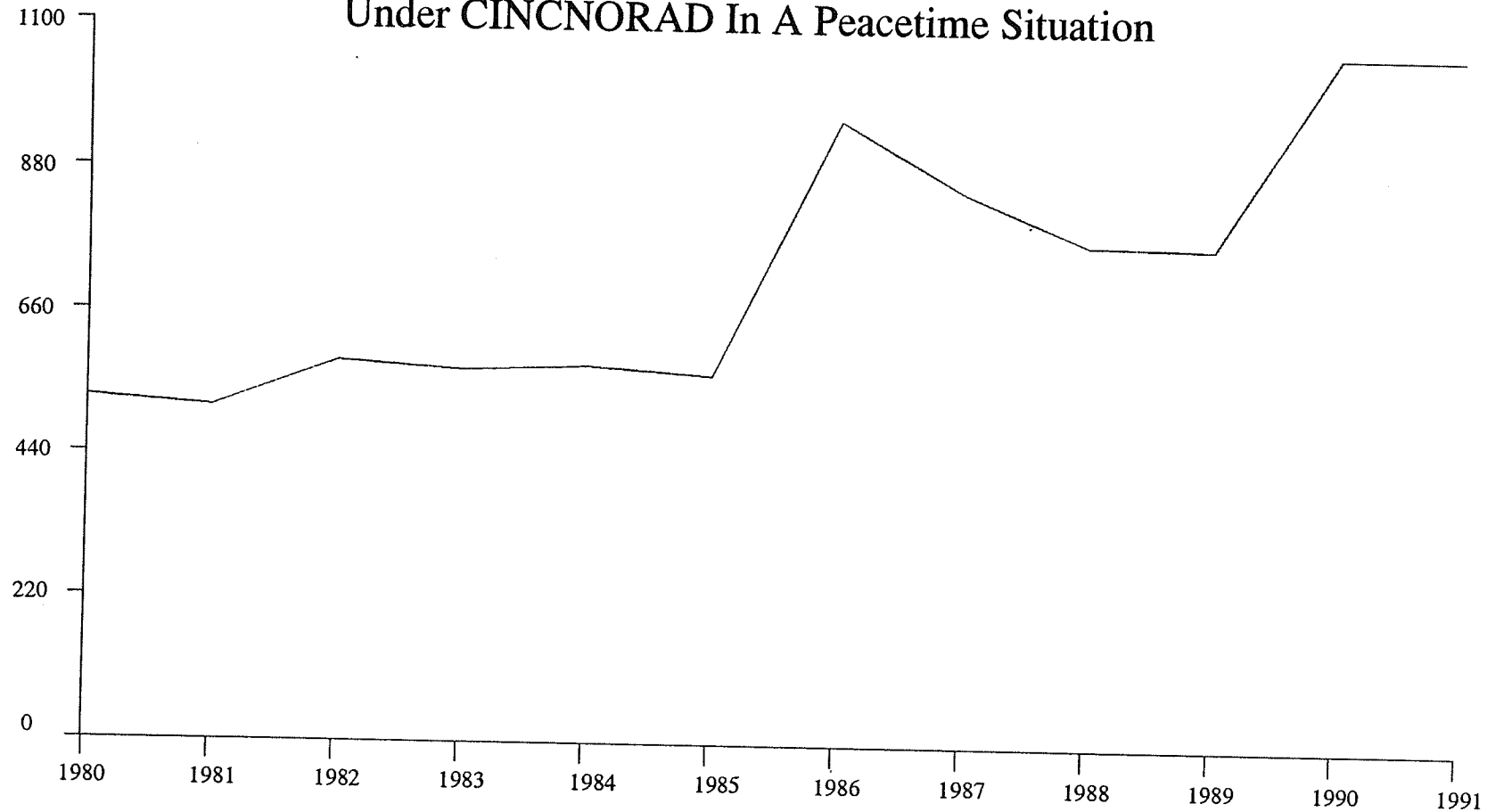
NORAD. Furthermore, the total number of Canadian personnel falling under CINCNORAD's command outnumbers the American contingent in every year with the exception of 1986. It is also apparent that the total number of personnel under CINCNORAD has doubled in the last ten years.

It is immediately apparent that the majority of the personnel are from Canada. Furthermore, as revealed in Graph 5, the trend appears to be one of expansion. The total number of personnel under CINCNORAD in a peacetime situation grew throughout the 1980s. Graph 6 further exposes the nature of the NORAD staffing situation. It is interesting to note that Canada provides the majority of the personnel for the staffing of NORAD. It is even more interesting to note that Canadian personnel located in the United States outnumbered American personnel throughout the first half of the decade. In fact, the United States surpassed the Canadian contribution only in 1986. Both the Canadian and American contributions to the staffing of NORAD reveal a relatively flat profile. The American contribution reveals a pronounced growth in the 1985 to 1986 time period which appears to be directly linked to the ADI modernization plan. The Canadian example reveals no such growth until the end of the decade. This may be a result of increased staffing requirements due to the completion of some of the ADI projects begun in the middle of the decade.

The number of Canadians serving under CINCNORAD in the United States has remained relatively stable throughout the 1980 to 1991

NORAD Personnel

Under CINCNORAD In A Peacetime Situation

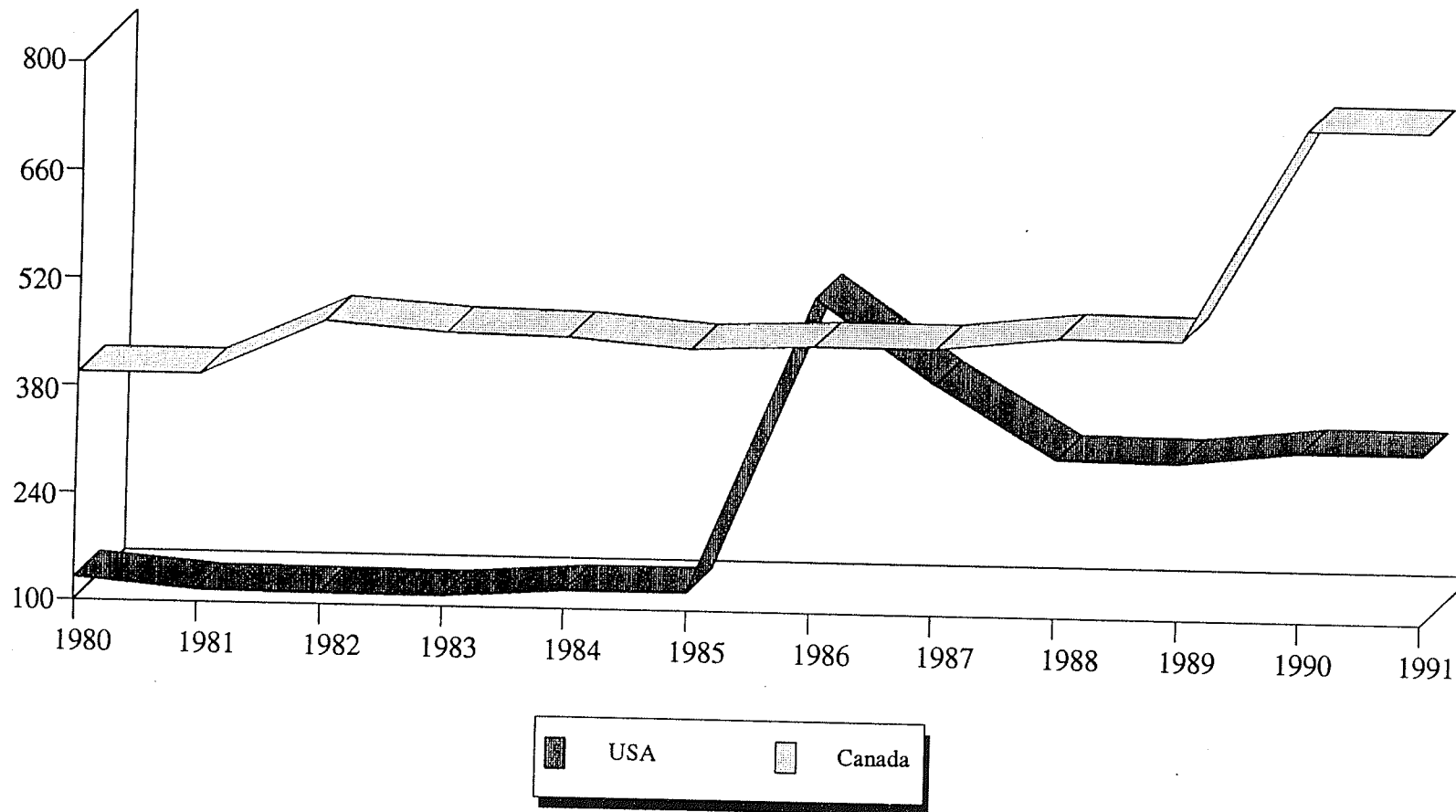


Source: *NORAD*

Graph 5

NORAD Staffing

Peacetime Staff Under *CINCNORAD*



Graph 6

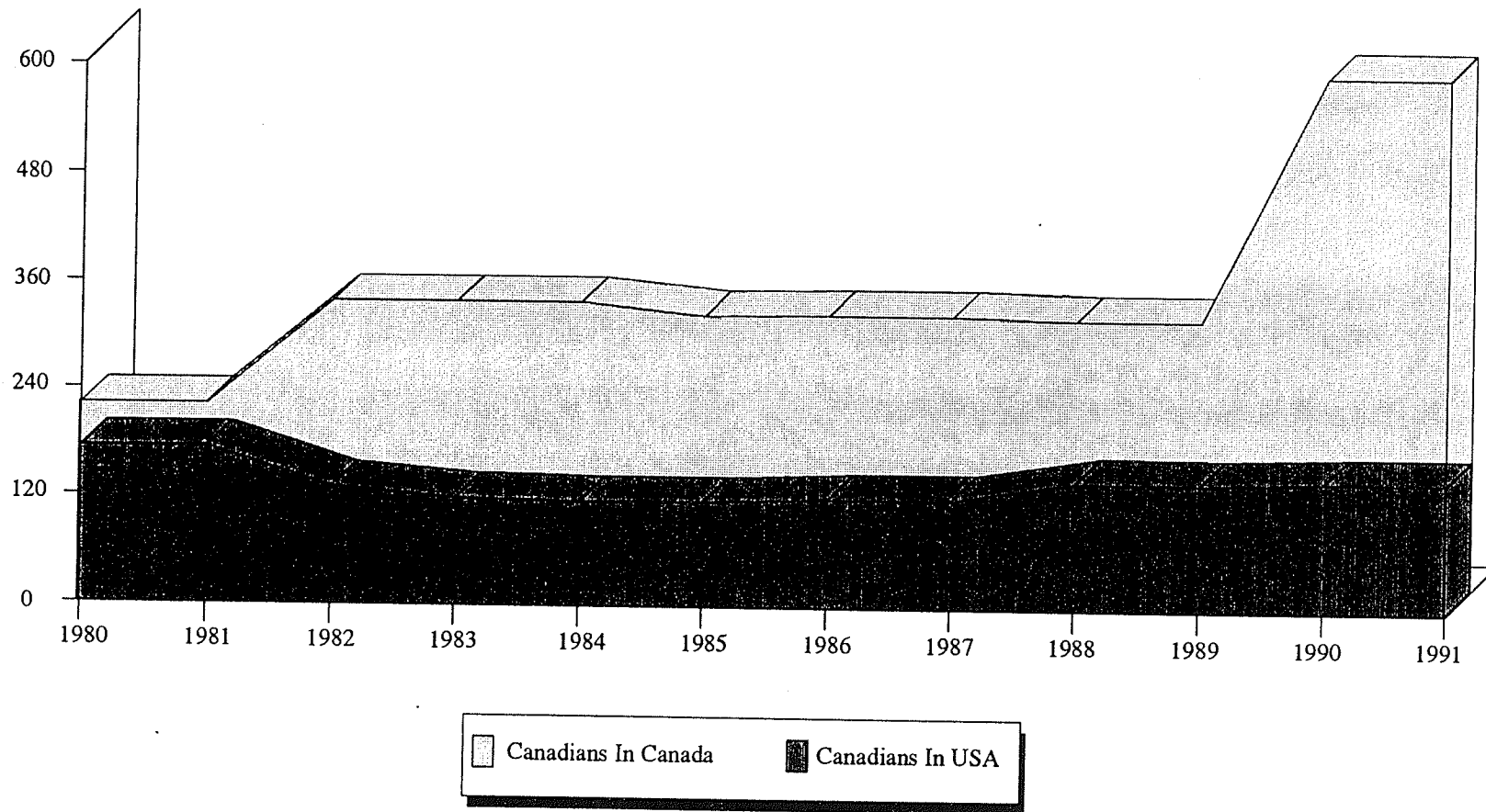
Source: *NORAD*

time period. As revealed by Graph 7, staffing of NORAD by Canadian personnel based in the United States has remained relatively stable. Similarly, Canadians serving under CINCNORAD stationed in Canada remained fairly level throughout the 1980s with a marked increase at the end of the decade. This is highly interesting as it illustrates that Canadian personnel are not outnumbered by their American counterparts. Again, it is possible that the various improvements and additions to the air defence system begun in the mid 1980s required additional manpower which necessitated this increase. Graph 8 reveals a vastly different situation in relation to United States staffing of NORAD. It is immediately apparent that the United States did not maintain many of its own personnel in Canada. One individual was brought into Canada in 1985 followed by a larger influx in 1986. From 1987 onwards, the United States has maintained only two individuals in Canada. As a result, Canadian sensitivity to American influence in Canada is lessened. It is interesting to note that a similar sensitivity to a preponderance of Canadians in the United States has not materialized in the United States. The United States staffing of NORAD by personnel based in the United States further reveals a fairly stable profile during the first half of the decade. Marked growth occurred in this area during the 1985 to 1986 time period. Once again, it would appear that the implementation of ADI is responsible for this increase.

However, if one looks at Graph 9, a slightly different picture emerges. Should there be a reason for CINCNORAD to act,

NORAD Staffing

CANADA

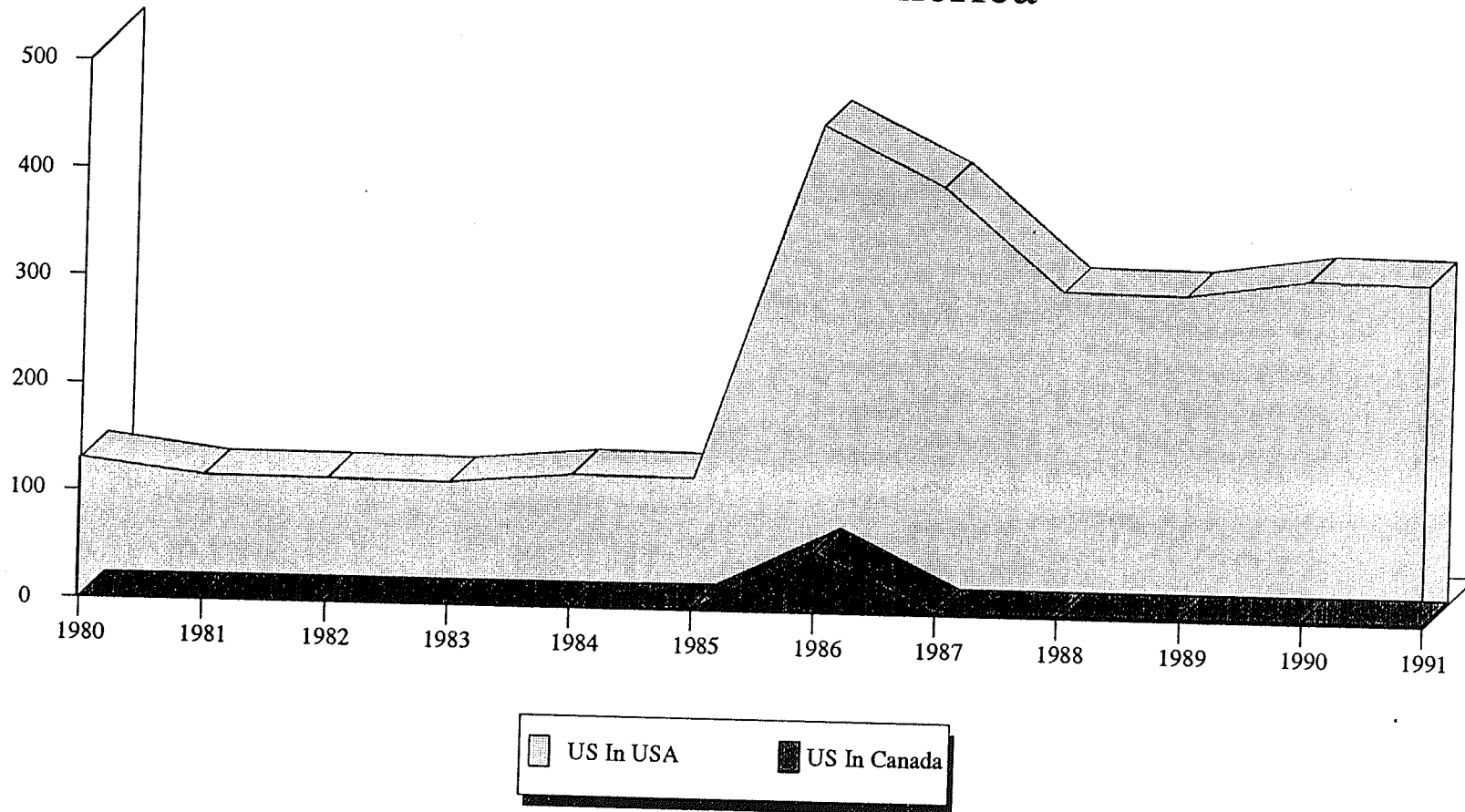


Graph 7

Source: *NORAD*

NORAD Staffing

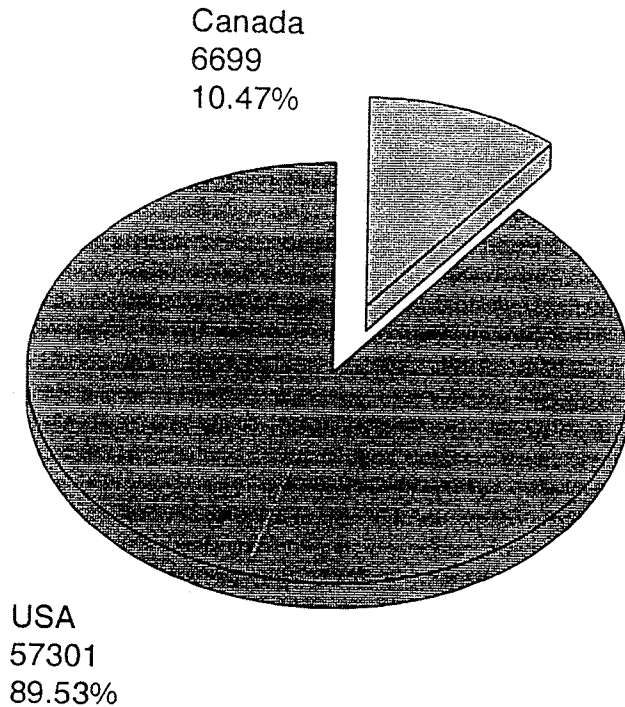
United States of America



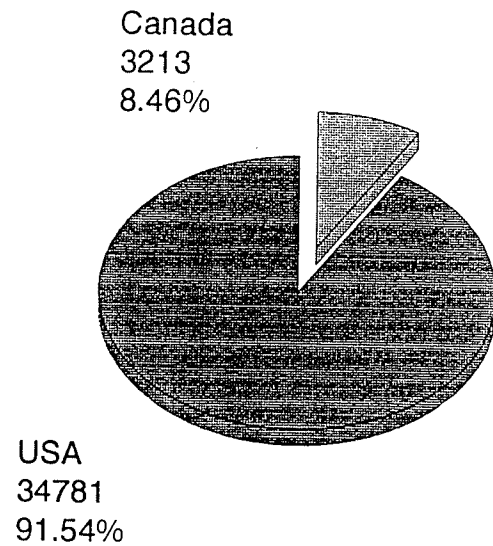
Graph 8

Source: *NORAD*

1985



1991



Overall % Decrease = 40.63%
 Canadian Decrease = 52.04%
 US Decrease = 39.30%

1985 *NORAD* Forces In A Wartime Situation

Canadian Forces:	5,042
Canadian Civilians:	1,657
Total:	6,699
US Forces:	57,301
GRAND TOTAL:	64,000

1991 *NORAD* Forces In A Wartime Situation

Canadian Forces:	2,748
Canadian Civilians:	465
Total:	3,213
US Forces:	24,578
US Forces Alaska:	10,203
GRAND TOTAL:	37,994

NORAD Canada / USA Personnel Contribution

Graph 9

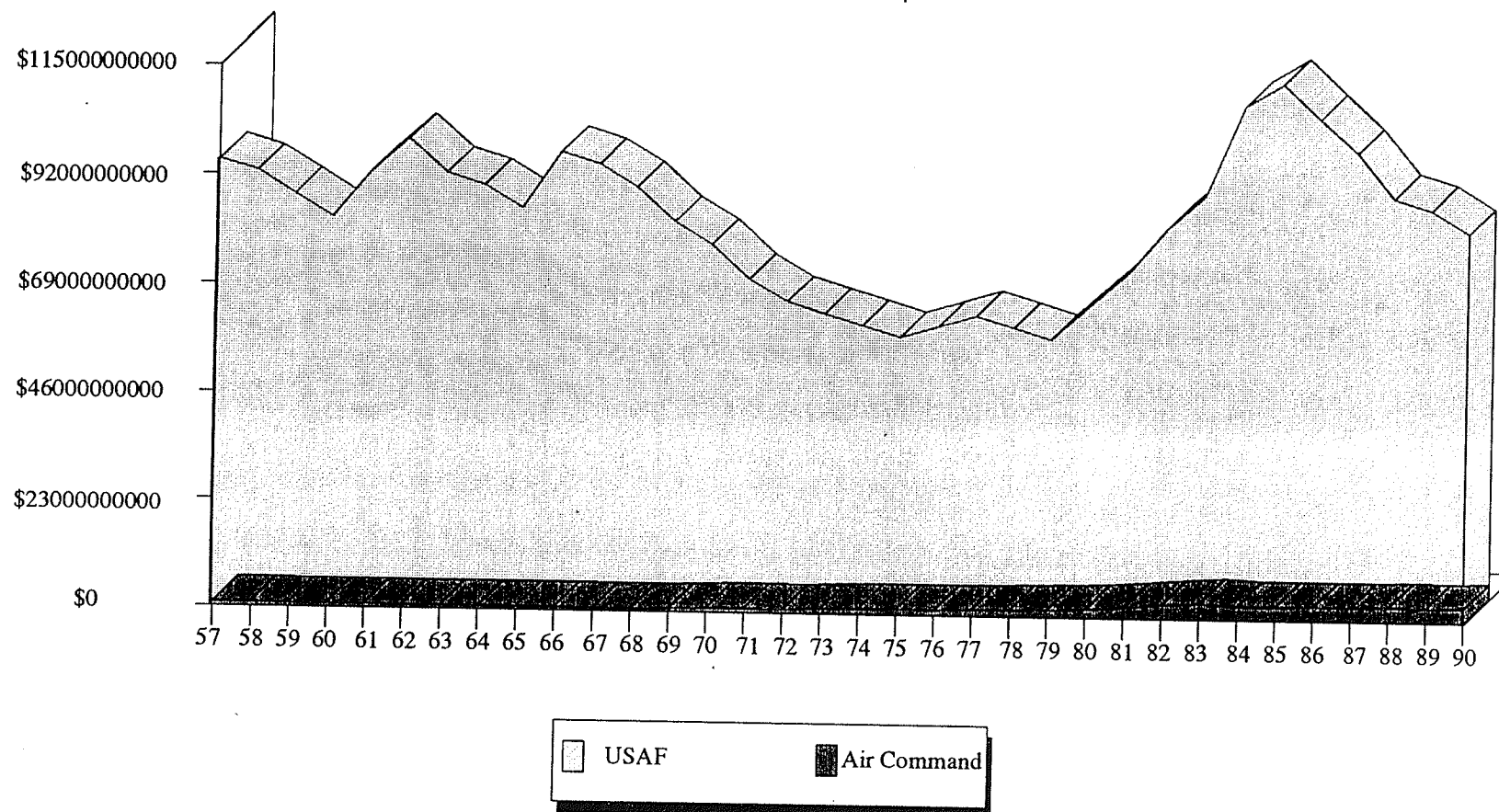
Source: *NORAD*

the situation changes dramatically. The figures reveal the greater resources available to the United States. The differential is easily explainable when one takes into account the size of both regular and reserve forces from which each country could draw upon. While the United States has greater resources from which to draw upon, it is clear that there have been fairly serious cuts made in terms of manpower available to CINCNORAD in a wartime situation. In 1985, the total number of both Canadians and Americans that could be drawn upon was 64,000. By 1991, this number dropped to 37,994 which represents a real decrease of 40.63%. Furthermore, the numbers reveal a decrease of 52.04% in Canadian personnel and a 39.30% decrease in United States personnel for this time period. In part, this decrease can be accounted for by the change in relations between East and West. As relations between East and West continue to improve, it would not be surprising to see further cuts in the number of personnel which could be utilized by CINCNORAD in a wartime situation. Proportionately, the contribution by the United States in this regard was 89.53% of the total force structure in 1985. Even with the reductions in overall force size available to CINCNORAD, the United States contributed 91.54% of the overall force size in 1991. Not only did the Canadian contribution experience a greater decrease, the percentage share decreased as well.

Other budgetary considerations such as overall spending on the respective air services reveal similar profiles. The United

Spending 1957 - 1990

1990 US \$



Graph 10

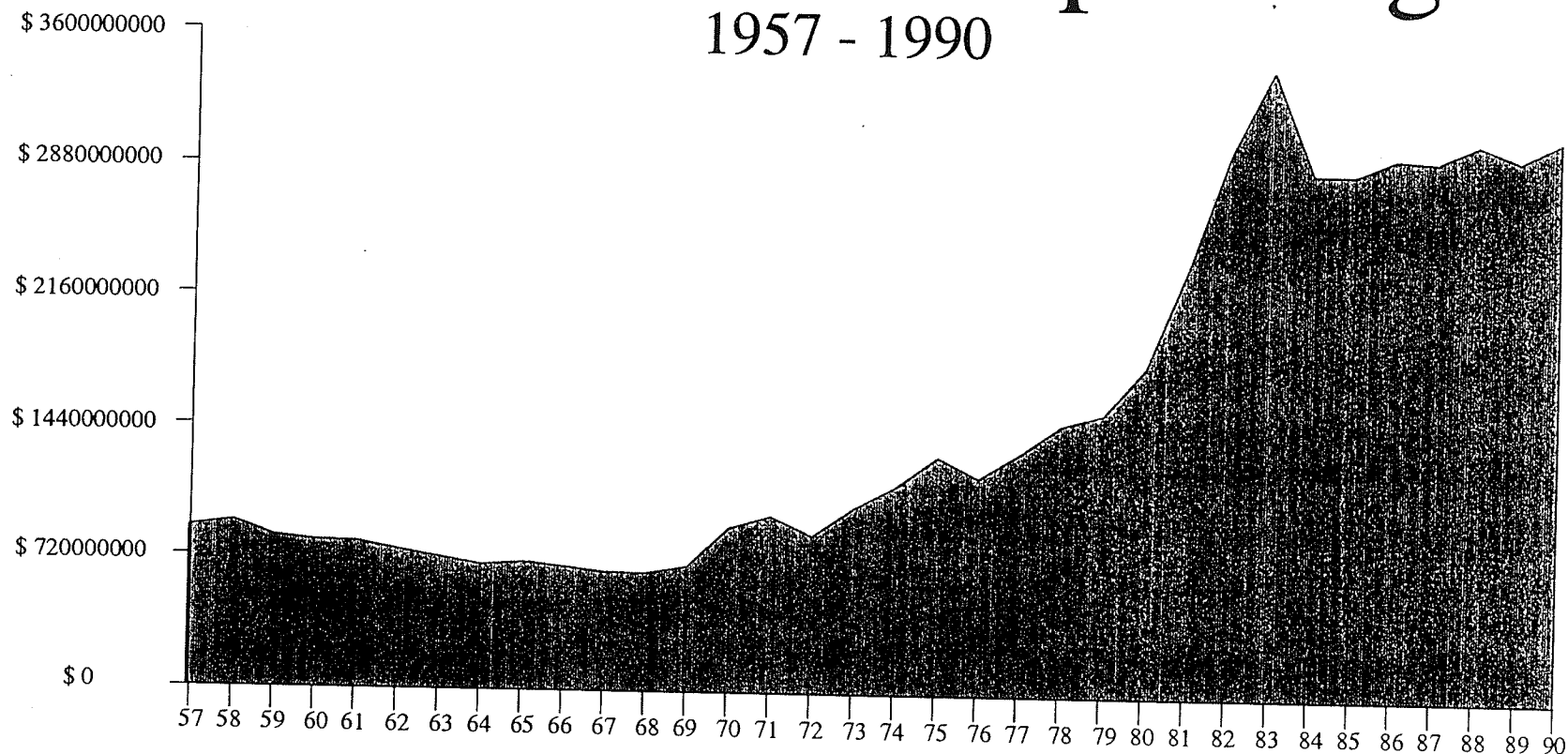
Source: DND

States spending on the USAF since 1957 reveals growth and decline throughout a variety of administrations (See Graph 10). There are two peaks in the early profile which seem to be linked to United States involvement in Korea and Vietnam. Following these peaks there appears to be a decline throughout the 1970s. New growth in the USAF budget appears as a peak during what is best characterized as the Reagan defence buildup. The Canadian example shows no such variations. As a result of the significantly smaller budget that Air Command has to live with, the curve representing the Air Command budget appears compressed and flat in contrast to the USAF example. Taken in isolation, Air Command spending has grown over the 1957 to 1990 period. As revealed by Graph 11, Air Command has experienced significant increases in its funding. In particular, this is most apparent throughout the latter part of the 1970s and early 1980s. Some of the peaks visible in this profile are easily explainable. In particular, the huge rise in spending between 1979 and 1984 is directly attributable to the CF-18 purchase.

While it appears that there has been a renewed interest in air defence and in NORAD on the part of the Canadian government, a slightly different picture emerges when one looks at Graph 12. It is readily apparent that Air Command has been steadily losing ground in the period of 1957 to 1990 as far as share of the overall defence budget goes. It is also apparent that the peaks revealed by this profile also coincide with certain major purchases. The peak which was visible in Graph 11 which coincides

Air Command Spending

1957 - 1990

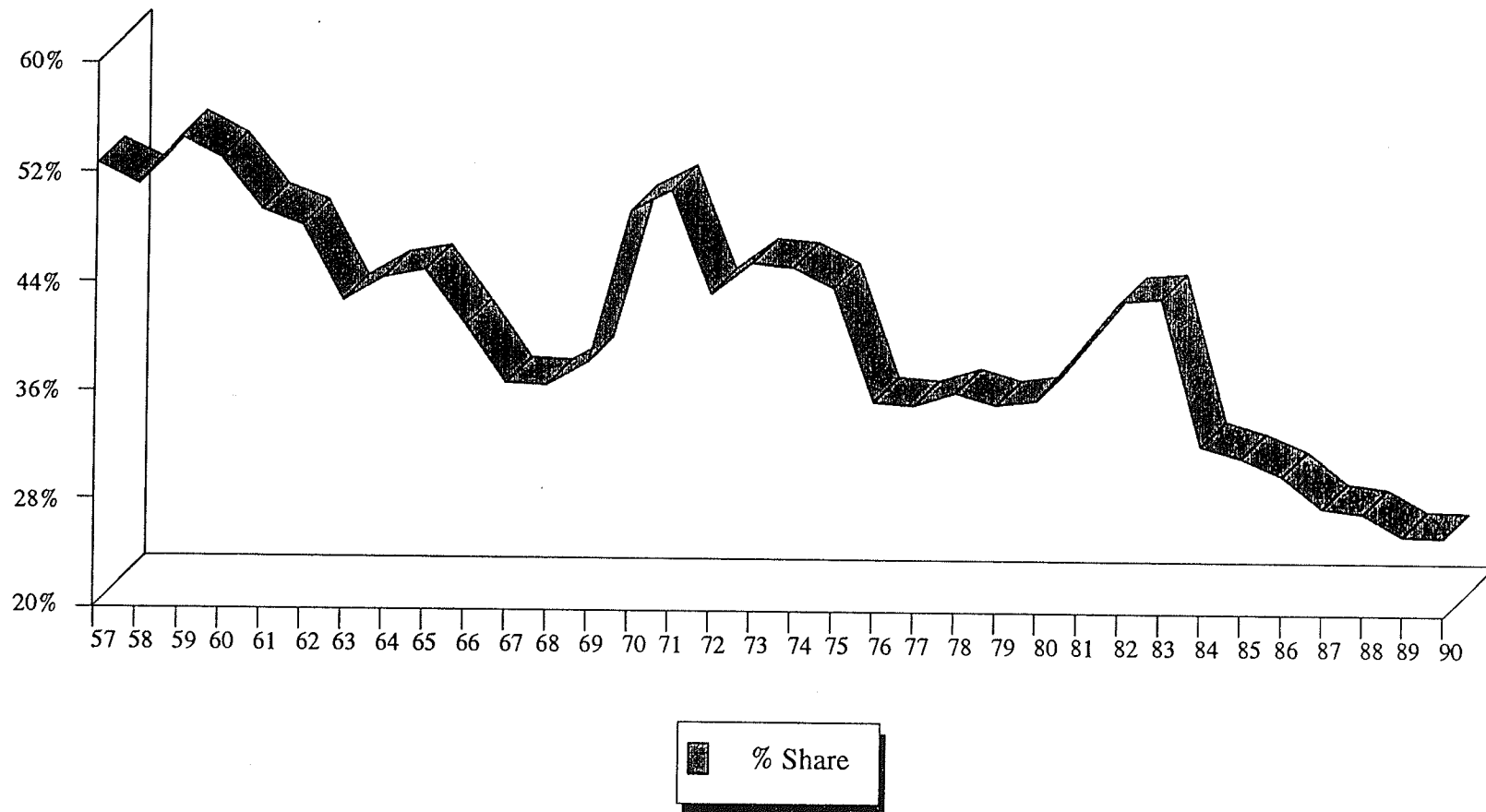


1990 US \$

Graph 11

Source: *DND*

Air Command Share Of Defence Spending



Graph 12

Source: *DND*

with the CF-18 purchase is also visible in Graph 12.

From the data gathered, it is quite obvious that Canada does not contribute as much to the operation of NORAD as does the United States. Furthermore, the numbers reveal that Canada is not living up to the accepted formula for financing NORAD which apportions 90% of the cost to the United States and 10% to Canada. It would appear that Canadian funding of NORAD during the Mulroney regime was predicated on doing as little as possible rather than on contributing at an optimal level. The actions of the Mulroney government do not match the rhetoric. What is worse, the percentage share of the annual expenditure on NORAD actually decreased. Despite the public pronouncement that Canada must be willing to assume a greater share of the defence burden, the opposite seems to have happened in the case of NORAD. It appears that, public pronouncements are not always translated into action. Given that the traditional threat from the Soviet Union has disappeared, it should be interesting to see whether the support for NORAD as well as the funding can be maintained even at their present levels. The bulk of the contribution that Canada has made to the operation of NORAD throughout the 1980s has been in the area of manpower. The Canadian contribution is far from trivial in this area. Nevertheless, a contribution in manpower alone cannot redress the gross imbalance in the funding of NORAD.

On the positive side, both funding and staffing of NORAD have increased on the part of both countries. It would seem that this indicates a renewed interest in air defence in Canada and

the United States. The decrease in force size during a war time situation, and the decreasing share of the defence budget allocated to the air services points to a change in direction which has been brought about by the collapse of the Soviet Union. It should be interesting to see whether or not levels of funding and staffing remain the same over the next five to ten years. Similarly, it will be interesting to see how the role of NORAD is defined in the future. Given that many areas still exist where NORAD has a legitimate role to play, it does not seem that NORAD will disappear any time soon. NORAD has progressed and evolved over time. In order to stay relevant, it will have to change yet again and shift its focus to other security problems which threaten North America.

As NORAD can serve both civilian and military purposes, it is obvious that the command can remain relevant in the current context. The emphasis on defence against Soviet aggression may no longer be as relevant as it once was but there are other functions which NORAD can accomplish. American interests will maintain NORAD as an integral part of the Unified Space Command (USC) so long as Canadian territory is required. The NWS along with AWACS aircraft are an integral part of the surveillance capability of the USC. For Canada, NORAD represents an effective way to bolster Canadian security, sovereignty, and independence. It also provides for a way to regulate air traffic between the two countries with some certainty. Furthermore, it prevents the embarrassment of requiring the United States to act unilaterally

in surveilling and patrolling Canadian airspace. Lastly, NORAD provides a means for Canada to gain an inside look into American activities and contributes to the assertion of sovereignty over the Arctic Archipelago. All of these factors combined with the fact that NORAD is extremely cost effective for Canada provide for an environment where the renewal of NORAD is a foregone conclusion. Successive Canadian governments have recognized the desirability and cost effectiveness of this arrangement. The Mulroney government merely recognized the fact that NORAD would continue regardless of Canadian funding and therefore did not contribute the expected 10% to the NORAD annual operating budget. As Jockel and Sokolsky accurately point out, the difference between Mulroney and Trudeau is not one of substance. It is merely a difference in style.

Chapter 4 Footnotes

1. Prime Minister Brian Mulroney. "In Pursuit of Peace", notes for a speech to the Consultative Group on Disarmament and Arms Control, October 31, 1985, Ottawa, P. 2.
2. Olson Jr., Mancur. The Logic of Collective Action. (Cambridge: Harvard University Press, 1965). P. 3
3. Ibid. P. 14-16.
4. Ibid. P. 34.

CONCLUSION

It is apparent that issues linked to NORAD and continental defence are driven by USAF and CAF needs. Throughout the formative process and thereafter, it has always been the USAF and the CAF which has initiated policy changes and decisions which were then passed along to the respective governments for approval. While NORAD is an issue in Canadian politics, it is simply a matter of long-standing policy in the United States. Furthermore, because NORAD is an issue in Canadian politics, it is often exploited on a political level which has little to do with the reality of government policy.

It appears that there has been a renewed emphasis on air defence throughout the 1980s as evidenced by the Air Defence Initiative and the construction of the North Warning System. However, Canadian staffing and funding of NORAD throughout the 1980s reveals a mixed picture. From the data, it is clear that Canada did not contribute the traditional 10% of the NORAD annual budget after 1984. Funding for NORAD under the preceding Liberal government hovered around 10%. Brian Mulroney promised to do more and to take on a greater share of the defence burden. Rhetoric aside, the Mulroney promise to do more does not seem to have been translated into actual funds. In fact, the data shows that the percentage share of NORAD funding actually decreased after 1984. The increase in manpower which was experienced at the end of the decade partially offsets the decrease in funding. While an increase in manpower can be equated with being seen to do more, when combined with funding which is less than the traditional

10%, it cannot be interpreted as doing more than was the case.

NORAD is important to Canada as it serves to enhance Canadian security. Moreover, the radar stations erected as an electronic tripwire across the Arctic enhance Canadian claims over this region. Canadian participation in NORAD has been of great benefit to Canada. While Canadian sovereignty and security have been strengthened as a result of NORAD, it is important to remember that the United States has provided the majority of the funds. The Canadian partnership in NORAD can be viewed along the argument of the exploitation of the strong by the weak. As such, Canada has been able to get by on the efforts and contribution of the United States.

Perhaps the nature of the primary threat has changed but there are other threats to the security of North America which will necessitate an organization such as NORAD to maintain vigilance over North American airspace. It has been estimated that in excess of 3,500 illegal drug shipments arrive in the United States and Canada by air every year. It would seem that the technology and equipment employed by NORAD could be diverted to fighting the illegal importation of drugs and other materiel into North America. As the threat from the former Soviet Union has evaporated, NORAD has been expanding its activities in this area.

The Soviet Union is not what it used to be and neither is the threat and security challenge posed by that region of the world. Due to the disintegration of the Soviet Union and the demise of

the Warsaw Pact, relations between East and West have improved dramatically. However, it would be a colossal mistake to ignore completely the potential for that threat to revive. Given the political and economic chaos which has engulfed the former Soviet republics, it would not be surprising to see a backlash against reform and democratization. Should the former Soviet Union become embroiled in a widespread civil war, it is not inconceivable that the military might intervene to bring some order to the chaos. What happens at that point is open to speculation but it is obvious that such an occurrence would be extremely undesirable. The question of how the armed forces are divided and who has control over them also comes to the forefront.

There are other security related issues in which NORAD has a role to play. There is a certain amount of disorder to the "New World Order" and the reported sale of nuclear warheads to Iran is just one of the indicators that the post Cold War period may be just as tense and in fact more complex than the cold war period. It is much easier to focus on one hostile nation than it is to keep track of many nations which are potentially hostile. If the quest to join the nuclear club continues, Canada and the United States may face new adversaries. Furthermore, given that many nations are well on their way to developing a nuclear capability, NORAD's launch warning and tracking capability will still be necessary. Should the system attain some defensive capability through a modified and downscaled SDI system, it could offer protection against accidental launch or sneak attack from any

source.

The NORAD agreement was renewed again in 1991. This renewal was marked by routine indifference in the United States and by renewed debate in Canada. The following issues were cited as being relevant by the Special Panel to the Sub-committee of the House of Commons Standing Committee on External Affairs and International Trade during the debate leading up to the 1991 renewal of the NORAD agreement: strategic bomber and cruise missile modernization, the US-USSR Strategic Arms Reduction Talks (START), Soviet Strategic Air Defence Limits, and multilateral aerospace surveillance.

The modernization of strategic bombers and cruise missiles was cited as a relevant factor in the renewal of NORAD as new types of Soviet bombers such as the TU-160 Blackjack entered service. Similarly, the development of a new generation of ALCM's and SLCM's was cited as evidence of new weapons systems which posed a potential threat to North American security. Related to strategic bomber and cruise missile modernization were the START arrangements. START was cited as having the potential for the Soviet Union to increase their strategic bomber and cruise missile forces. Any such increase would obviously complicate the efforts of NORAD to defend North American security interests. While it is obvious that the situation today is quite different than the one which existed at the height of the Cold War, it is important to remember the potential that these weapons represent should the situation change.

As far as limits on Soviet strategic air defence systems are concerned, the Report of the Special Panel to the Sub-committee of the House of Commons Standing Committee on External Affairs and International Trade considering the question of renewing in May 1991 the North American Aerospace Defence Agreement cited the following reasons as being relevant in their recommendation for the renewal of the NORAD agreement: "The Soviet Union has deployed the world's largest and most complex, multiple-layered network of territorial or strategic air defences, based on a combination of large radars, surface-to-air missile (SAM) batteries, and interceptor aircraft; which is complemented by 100 anti-ballistic missiles near Moscow (under the terms of the ABM Treaty). As well, the Soviets are continuing with research and development efforts in both active and passive strategic defence measures."¹ As far as NORAD and air defence are concerned, this can be considered a good thing as early warning and surveillance abilities are capabilities which exert a stabilizing influence. Defence and surveillance oriented systems provide any nation with a greater sense of security as these capabilities tend to decrease the likelihood of a sneak attack and raise the cost to be paid by any attacker. By maintaining a certain level of capability in this sphere, the former Soviet republics can gain a measure of security for themselves.

The issue of multilateral aerospace surveillance is somewhat of a future consideration as the proposed system will not be ready for deployment in the immediate future. In many ways, such

a system would be a follow on to the North Warning System. Regardless of whether or not the Soviet Union exists, Canada and the United States will still require a means by which they can carry out surveillance, identification and tracking of aircraft, sovereignty assertion, environmental protection and monitoring, and resource development over their territory. Canada and the United States are developing a Space Based Radar system (SBR) for NORAD which holds the potential of removing the need for Canadian territory to be used in the carrying out of these functions. There are plans to place the SBR system into orbit in such a manner so that it will provide this function for a number of different nations and not just Canada and the United States.

Through a combination of political and military considerations, NORAD has been able to evolve to meet the challenge of new threats. The alliance structure offers many advantages beyond financial considerations which seem to outweigh the disadvantages which are incurred as a result of Canadian participation in NORAD. Thus far, bilateral cooperation has resulted in an extremely attractive cost sharing arrangement within the NORAD partnership. It appears that the arrangement is even more beneficial to Canada as the relative investment per year is even lower than the accepted 10% share that has been apportioned to Canada. NORAD has provided for increased security for all of North America. However, it will be interesting to see if the the United States will continue to fund NORAD as it has in the past. Canada must accept greater responsibility for the

defence of Canadian territory rather than exercising excessive reliance on the United States.

Defence is like insurance. It is purchased against the likelihood of any particular event occurring. What the governments in Canada and the United States must now decide is whether the new threats are realistic and if they are worth spending money on. Even if a credible threat to the security of North America can be defined, it may be more difficult to mobilize support for defence against a threat which appears somewhat nebulous. Nevertheless, politicians and policy makers ought to be aware that the surveillance component of NORAD serves a vital function which enhances the sovereignty of Canada and it is a role which would have to be performed regardless of whether or not the Soviet Union or some other external threat exists. As such, Canada ought to do more in terms of funding NORAD as NORAD enhances national security and sovereignty. It is apparent that the United States will continue to fund NORAD regardless of whether or not Canada follows suit, but if Canada is to be a true partner in NORAD it will have to contribute a fair amount based on the traditional formula of 90% to the United States and 10% to Canada. Many of the nations which are potentially hostile to North America are still several years away from developing an offensive nuclear capability. If the analogy of defence as insurance is to be taken at face value, both nations ought to bear in mind that defence is not something one buys for the immediate moment. It is something purchased for future

consideration.

In essence, NORAD is a rational solution to a common problem faced by both the United States and Canada. Canadian funding for NORAD is quite low given that Canada would have to spend a considerable amount of money to do the job without the cooperation of the United States. It appears that regardless of who is in power in Ottawa, this fact is understood. The only difference made by the Mulroney government with regard to air defence appears to be the greater contribution to the construction of the North Warning System. While this is not something to be dismissed, it ought to be remembered that the bulk of the research and development costs were absorbed by the United States. As the SCEAND report on NORAD pointed out, when the costs of the NWS and ADI are combined, Canada only paid for 12% of the total expenditure. This actually represents a significant decrease in funding as Canada has traditionally been responsible for about 30% of the costs. The Mulroney government did not live up to its promise to do more. Not only did it not do more, it in fact did less than what has been traditionally expected of Canada. Given that it has been understood that Canada can get away with doing as little as possible and that this is an acceptable policy option, it is doubtful that the situation will change.

Conclusion Footnotes

1. The NORAD Renewal Issue. *Report of the Special Panel to the Sub-committee of the House of Commons Standing Committee on External Affairs and International Trade.* (Ottawa: The Canadian Institute for International Peace and Security) p.34.

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APPENDIX A

Text of the North American Air Defence Agreement of 1958

The basis of the agreement is an exchange of notes between Canada and the United States on May 12, 1958, in Washington, reprinted in Canada Treaty Series 1958, no.9.

1) Canadian Ambassador in Washington to the Secretary of State

I have the honour to refer to discussions which have taken place between the Canadian and the United States authorities concerning the necessity for integration of operational control of Canadian and United States Air Defences and, in particular, to the study and recommendations of the Canada-United States Military Group. These studies led to the joint announcement of August 1, 1957, by the Minister of National Defence of Canada and the Secretary of Defense of the United States, indicating that our two Governments had agreed to the setting up of a system of integrated operational control for the air defences in the continental United States, Canada and Alaska under an integrated command responsible to the Chiefs of Staff of both countries. Pursuant to the announcement of August 1, 1957, an integrated headquarters known as the North American Defence Command (NORAD) has been established on an interim basis at Colorado Springs, Colorado.

For some years prior to the establishment of NORAD, it had been recognized that the air defence of Canada and the United States must be considered as a single problem. However, arrangements which existed between Canada and the United States provided only for the co-ordination of separate Canadian and United States air defence plans, but did not provide for the authoritative control of all air defence weapons which must be employed against an attacker.

The advent of nuclear weapons, the great improvements in the means of effecting their delivery, and the requirements of the air defence control systems demand rapid decisions to keep pace with the speed and tempo of technological developments. To counter the threat and to achieve maximum effectiveness of the air defence system, defensive operations must commence as early as possible and enemy forces must be kept constantly engaged. Arrangements for the co-ordination of national plans requiring consultation between national commanders before implementation

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had become inadequate in the face of a possible sudden attack, with little or no warning. It was essential therefore, to have in existence in peacetime an organization, including the weapons, facilities and command structure which could operate at the outset of hostilities in accordance with a single air defence plan approved in advance by national authorities.

Studies made by representatives of our two Governments led to the conclusion that the problem of air defence of our two countries could best be met by delegating to an integrated headquarters, the task of exercising operational control over combat units of the national forces made available for the air defence of the two countries. Furthermore, the principle of an integrated headquarters exercising operational control over assigned forces has been well established in various parts of the North Atlantic Treaty area. The Canada-United States region is an integral part of the NATO area. In supporting the strategic objectives established in NATO for the Canada-United States region and in accordance with the provisions of the North Atlantic Treaty, our two Governments have, by establishing the North American Air Defence Command recognized the desirability of integrating headquarters exercising operational control over assigned air defence forces. The agreed integration is intended to assist the two Governments to develop and maintain their individual and collective capacity to resist air attack on their territories in North America in mutual self-defence.

The two Governments consider that the establishment of integrated air defence arrangements of the nature described increases the importance of the fullest possible consultation between the two Governments on all matters affecting the joint defence of North America, and that defence co-operation between them can be worked out on a mutually satisfactory basis only if such consultation is regularly and consistently undertaken.

In view of the foregoing considerations and on the basis of the experience gained in the operation on an interim basis of the North American Air Defence Command, my Government proposes that the following principles should govern the future organization and operations of the North American Air Defence Command.

- (1) *The Commander-in-Chief NORAD (CINCNORAD) will be responsible to the Chiefs of Staff Committee of Canada and the Joint Chiefs of Staff of the United States, who in turn are responsible to their respective Governments. He will operate within a concept of air defence approved by the appropriate authorities of our two Governments, who will bear in mind their*

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objectives in the defence of the NATO area.

- (2) The North American Air Defence Command will include such combat units and individuals as are specifically allocated to it by the two Governments. The jurisdiction of the Commander-in-Chief, NORAD, over those units and individuals is limited to operational control as hereinafter defined.
- (3) "Operational Control" is the power to direct, co-ordinate, and control the operational activities of forces assigned, attached or otherwise made available. No permanent changes of station would be made without approval of the higher national authority concerned. Temporary reinforcement from one area to another, including the crossing of the international boundary, to meet operational requirements will be within the authority of the commanders having operational control. The basic command organization for the air defence forces of the two countries, including administration, discipline, internal organization and unit training, shall be exercised by national commanders responsible to their national authorities.
- (4) The appointment of CINCNORAD and his Deputy must be approved by the Canadian and the United States Governments. They will not be from the same country, and CINCNORAD staff shall be an integrated joint staff composed of officers of both countries. During the absence of CINCNORAD, command will pass to the Deputy Commander.
- (5) The North Atlantic Treaty Organization will continue to be kept informed through the Canada-United States Regional Planning Group of arrangements for the defence of North America.
- (6) The plans and procedures to be followed by NORAD in wartime shall be formulated and approved in peacetime by appropriate national authorities and shall be capable of rapid implementation in an emergency. Any plans or procedures recommended by NORAD which bear on the responsibilities of civilian departments or agencies of the two Governments shall be referred for decision by the appropriate military authorities to those agencies and departments and may be the subject of intergovernmental co-ordination.

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- (7) Terms of reference for CINCNORAD and his deputy will be consistent with the foregoing principles. Changes in these terms of reference may be made by agreement between the Canadian Chiefs of Staff Committee and the United States Joint Chiefs of Staff, with the approval of higher authority as appropriate, provided that these changes are in consonance with the principles set out in this Note.
- (8) The question of the financing of expenditures connected with the operation of the integrated headquarters of the North American Air Defence Command will be settled by mutual agreement between appropriate agencies of the two Governments.
- (9) The North American Air Defence Command shall be maintained in operation for a period of ten years or such shorter period as shall be agreed by both countries in the light of their mutual defence interests, and their objectives under the terms of the North Atlantic Treaty. The terms of this Agreement may be reviewed upon request of either country at any time.
- (10) The Agreement between parties to the North Atlantic Treaty regarding the status of their forces signed in London on June 19, 1951, shall apply.*
- (11) The release to the public of information by CINCNORAD on matters of interest to Canada and the United States of America will in all cases be the subject of prior consultation and agreement between appropriate agencies of the two Governments.

If the United States Government concurs in the principles set out above, I propose that this Note and your reply should constitute an Agreement between our two Governments effective from the date of your reply.

* Canada Treaty Series 1953, no. 13.

2> American Under-Secretary of State to Canadian Ambassador in Washington

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I have the honour to refer to Your Excellency's Note No.263 of May 12, 1958, proposing on behalf of the Canadian Government certain principles to govern the future organization and operation of the North American Air Defence Command (NORAD).

I am pleased to inform you that my Government concurs in the principles set forth in your Note. My Government further agrees with your proposal that your Note and this reply shall constitute an agreement between the two Governments, effective today.

Appendix B

CANADA Treaty Series 1968 No. 5

AGREEMENT TO EXTEND FOR A PERIOD OF FIVE YEARS THE AGREEMENT BETWEEN THE GOVERNMENT OF CANADA AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA CONCERNING THE ORGANIZATION AND OPERATION OF THE NORTH AMERICAN AIR DEFENCE COMMAND SIGNED AT WASHINGTON, D.C., MAY 12, 1958

I

The Secretary of State of the United States of America to the Canadian Ambassador to the United States of America.

DEPARTMENT OF STATE
WASHINGTON

March 30, 1968

Excellency:

I have the honor to refer to discussions in the Permanent Joint Board on Defense and elsewhere regarding the mutual interest of the United States and Canada in the continued cooperation between the two countries in the strategic defense of the North American continent. In particular, these discussions have concerned themselves with the North American Air Defense Command established on August 1, 1957 in recognition of the desirability of an integrated headquarters exercising operational control over assigned air defense forces. The principles governing the organization and operation of this Command were set forth in the Agreement between our two Governments dated May 12, 1958. That Agreement provided that the North American Air Defense Command was to be maintained in operation for a period of ten years.

The discussions recently held between the representatives of our two Governments have confirmed the need for the continued existence in peacetime of an organization, including the weapons, facilities and command structure, which could operate at the outset of hostilities in accordance with a single air defense plan approved in advance by the national authorities of both our countries. In the view of the Government of the United States, this function has been exercised effectively by the North American Air Defense Command.

My Government, therefore, proposes that the Agreement on the North American Air Defense Command effected by the exchange of notes, signed at Washington, D.C. on May 12, 1958, be continued

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for a period of five years, from May 12, 1968, it being understood that a review of the Agreement may be undertaken at any time at the request of either party and that the Agreement may be terminated by either Government after such a review following a period of notice of one year.

It is also agreed by my Government that this Agreement will not involve in any way a Canadian commitment to participate in an active ballistic missile defense.

If the Government of Canada concurs in the considerations and provisions set out above, I propose that this note and your reply to that effect shall constitute an agreement between our two Governments, effective from the date of your reply.

Accept, Excellency, the renewed assurances of my highest consideration.

For the Secretary of State:
JOHN M. LEDDY

His Excellency
A. E. Ritchie,
Ambassador of Canada

II

*The Canadian Ambassador to the United States of America to the
Secretary of State of the United States of America.*

CANADIAN EMBASSY

Washington, D.C.
March 30, 1968.

No. 115

Sir,

I have the honour to refer to your note of March 30, 1968 setting out certain considerations and provisions concerning the continuation of the agreement between our two Governments on the North American Air Defence Command effected by the exchange of notes May 12, 1958.

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I am pleased to inform you that my Government concurs in the considerations and provisions set out in your note, and further agrees with your proposal that your note and this reply, which is authentic in English and French, shall constitute an agreement between our two Governments effective today.

Accept, Sir, the renewed assurances of my highest consideration.

A. E. Ritchie

The Honourable
Dean Rusk,
The Secretary of State,
Washington, D. C.

Appendix C

CANADA Treaty Series 1973 No. 17

EXCHANGE OF NOTES BETWEEN THE GOVERNMENT OF CANADA AND THE GOVERNMENT OF THE U.S.A. CONSTITUTING AN AGREEMENT TO EXTEND THE AGREEMENT OF MAY 12, 1958, AS EXTENDED ON MARCH 30, 1968, RELATING TO THE ORGANIZATION AND OPERATION OF NORAD

I

*The Ambassador of Canada to the Secretary of State of
The United States of America*

Washington, May 10, 1973

Note No. 165

Sir,

I have the honour to refer to recent discussions between Canadian and United States authorities in the Permanent Joint Board on Defence and elsewhere, concerning cooperation between our two countries in the joint defence of North America. These discussions included an examination of the development programmes for modernized air defences and the strategic situation as related to our joint participation in the North American Air Defence Command (NORAD). The principles governing the organization and operation of this Command were set out in the Agreement between our two governments dated May 12, 1958. This Agreement was renewed with some additional provisions for a period of five years by an agreement between our two governments dated March 30, 1968.

The discussions between representatives of our two governments have confirmed that there is a continuing need for integrated operational control over forces made available for the air defence of Canada and the United States as provided by the aforesaid Agreements. The discussions also indicated, however, that additional time is required to examine the component elements of the concept for a modernized air defence system now under development. Further joint consultations will undoubtedly be needed in order that our two governments will be able to consider and decide upon the extent of modernization that will satisfy future requirements for the joint defence of North America, taking into account the evolving strategic situation, including developments in the Strategic Arms Limitation Talks. Representatives of our two governments consequently believe that the interests of both Canada and the United States would be best served in these circumstances by extending the NORAD Agreement on

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its present terms and conditions, for an additional period of time.

My Government, therefore, proposes that the Agreement on the North American Air Defence Command effected by the exchange of Notes, signed at Washington, D.C. on May 12, 1958, and as renewed by the exchange of Notes signed at Washington, D.C. on March 30, 1968, be extended without alteration in its present terms and conditions for a further period of two years, from May 12, 1973.

If the Government of the United States concurs in the considerations set out above, I have the honour to propose that this Note, which is equally authentic in English and French, and your reply to that effect shall constitute an agreement between our two governments, effective from the date of your reply.

Accept, Sir, the renewed assurances of my highest consideration.

M. Cadieux

The Hon. William P. Rogers,
The Secretary of State,
Washington, D.C.

II

*The Secretary of State of the United States of America to the
Ambassador of Canada*

Washington, May 10, 1973

Excellency:

I have the honor to refer to your note of May 10, 1973 proposing that the Agreement on the North American Air Defense Command effected by the exchange of notes of May 12, 1958, and continued by the exchange of notes of March 30, 1968, be extended without alteration in its present terms and conditions for a period of two years, from May 12, 1973.

I am pleased to inform you that my Government concurs in this proposal set forth in your note. My Government further agrees with your proposal that your note and this reply shall constitute an agreement between the two Governments effective today.

Accept, Excellency, the renewed assurances of my highest consideration.

Appendix C

Rufus Z. Smith
For the Secretary of State

His Excellency
Marcel Cadieux,
Ambassador of Canada.

Appendix D

CANADA Treaty Series 1975 No. 18

EXCHANGE OF NOTES BETWEEN THE GOVERNMENT OF CANADA AND THE
GOVERNMENT OF THE UNITED STATES OF AMERICA CONSTITUTING AN
AGREEMENT CONCERNING THE ORGANIZATION AND OPERATION OF THE NORTH
AMERICAN AIR DEFENCE COMMAND (NORAD)

I

*The Ambassador of Canada to the Secretary of State of
The United States of America*

Washington, D.C.
May 8, 1975

Sir,

I have the honour to refer to discussions which have taken place between representatives of our two Governments regarding the future co-operation between Canada and the United States of America in the defence of North America. Our Governments remain convinced that such co-operation, conducted within the framework of the North Atlantic Treaty, remains vital to their mutual security, compatible with their national interests and an important element of their contribution to the overall security of the NATO area.

As neighbours and allies within North America, our two Governments have accepted special responsibilities for the security of the Canadian-United States Region of NATO and, in fulfilling these responsibilities, have entered into a number of bilateral arrangements for integrated air defence embodied in the North American Air Defence Command (NORAD) have provided, since 1958, the means of exercising operational control of the forces assigned by our two Governments to the air defence of North America.

In the years since the NORAD Agreement was first concluded, there have been significant changes in the character of strategic weapons and in the nature of the threat they pose to North America. The most important of these changes has been the major increase in the number and sophistication of strategic missiles. One result has been the enhancement of mutual deterrence. Another is that while long-range bombers continue to pose a threat to North America, missiles now constitute the principal threat.

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In light of these developments, our two Governments retain a common interest in the maintenance of effective surveillance and control of North American airspace and in preventing its use for purposes detrimental to the security of North America. Since surveillance and control in peacetime are expected to assume increasing importance, each Government has decided to establish a joint civil-military system to carry out these activities in conjunction with the air defence operations of NORAD.

The large volume of air traffic flowing daily to, from and within North America, much of it across the border between our two countries, dictates that our national airspace surveillance and control systems be compatible with each other and requires a high degree of co-ordination between their military components. Our Governments agree that the necessary command and control arrangements can most effectively and economically be provided by the continued operation of the North American Air Defence Command.

In addition to performing the airspace surveillance and control functions related to air defence, NORAD will continue to monitor space activities of strategic and tactical interest and provide warning of aerospace activities that may threaten North America. Canadian participation in the activities of NORAD's aerospace warning systems does not involve any commitment by the Canadian Government to take part in an active ballistic missile defence arrangement.

In these circumstances the primary objectives of NORAD will in future be:

- (A) to assist each country to safeguard the sovereignty of its airspace;*
- (B) to contribute to the deterrence of attack on North America by providing capabilities for warning of attack and for defence against air attack;*
- (C) should deterrence fail, to ensure an appropriate response against attack by providing for the effective use of the forces of the two countries available for air defence.*

As in the case of all joint defence activities, the future activities envisaged for NORAD will require the closest co-operation between authorities of our two Governments and it is recognized that this can only be achieved in a mutually satisfactory way if full and meaningful consultation is carried out on a continuing basis. Our two Governments, therefore,

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undertake to ensure that such consultation takes place.

On the basis of our common appreciation of the circumstances described and of the experience gained since the inception of NORAD, my Government proposes that the following principles should govern the future organization and operations of the North American Air Defence Command:

1. The Commander-in-chief, NORAD (CINCNORAD), and his Deputy in CINCNORAD's absence, will be responsible to the Chief of Defence Staff of Canada and the Joint Chiefs of Staff of the United States, who in turn, are responsible to their respective Governments. They will operate within a concept of surveillance, warning, control and defence approval by the appropriate authorities of our two Governments, who will bear in mind their objectives in the defence of the Canada - United States Region of the NATO area.
2. The North American Air Defence Command will also include such combat units and individuals as are specifically allocated to it by the two Governments. The jurisdiction of the Commander-in-Chief, NORAD, over those units and individuals is limited to operational control as hereinafter defined.
3. "Operational Control" is the power to direct, co-ordinate and control the operational activities of forces assigned, attached or otherwise made available. No permanent changes of station would be made without approval of the higher national authority concerned. Temporary reinforcement from one area to another, including the crossing of the international boundary, to meet operational requirements will be within the authority of commanders having operational control. The basic command organization for the defence forces of the two countries, including administration, discipline, internal organization and unit training, shall be exercised by national commanders responsible to their national authorities.
4. The appointment of CINCNORAD and his Deputy must be approved by the Canadian and United States Governments. They will not be from the same country and the CINCNORAD staff shall be an integrated joint staff composed of officers of both countries. During the absence of CINCNORAD, command will pass to the Deputy Commander.
5. The North Atlantic Treaty Organization will continue to be

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kept informed through the Canada - United States Regional Planning Group of arrangements for the air defence of North America.

6. The plans and procedures to be followed by NORAD in wartime shall be formulated and approved by appropriate national authorities and shall be capable of rapid implementation in an emergency. Any plans or procedures recommended by NORAD which bear on the responsibilities of civilian departments or agencies of the two Governments shall be referred for decision by the appropriate military authorities to those agencies and departments and may be the subject of intergovernmental co-ordination through an appropriate medium such as the Permanent Joint Board on Defence, Canada - United States.
7. Terms of reference for CINCNORAD and his Deputy will be consistent with the foregoing principles. Changes in these terms of reference may be made by agreement between the Canadian Chief of Defence Staff and the United States Joint Chiefs of Staff, with approval of higher authority, as appropriate, provided that these changes are in consonance with the principles set out in this note.
8. The financing of expenditures connected with the operation of the integrated headquarters of the North American Air Defence Command will be arranged by mutual agreement between appropriate agencies of the two Governments.
9. The agreement between parties to the North Atlantic Treaty regarding the status of their forces signed in London on June 19, 1951, shall apply.
10. Public statements by CINCNORAD on matters of interest to Canada and the United States of America will in all cases be subject of prior consultation and agreement between appropriate agencies of the two Governments.

If the Government of the United States of America concurs in the considerations and provisions set out herein, I have the honour to propose that this Note, which is equally authentic in English or French, and your reply to that effect shall constitute an Agreement between our two Governments, which will enter into force on the date of your reply, with effect from May 12, 1975. This Agreement will supersede the Agreement on the North American Air Defence Command concluded in Washington, D.C. on May 12, 1958 and subsequently renewed on March 30, 1968 and May 10, 1973.

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The present agreement will remain in effect for a period of five years from May 12, 1975, during which its terms may be reviewed at any time upon the request of either party. It may be terminated by either Government, following twelve months' written notice to that order.

Accept, Sir, the renewed assurances of my highest consideration.

Marcel Cadieux
Ambassador of Canada

The Secretary of State,
Washington, D.C.

I

*The Deputy Assistant Secretary of State for Canadian Affairs
of the United States of America to the Ambassador of Canada*

Washington, D.C.
May 8, 1975

Excellency,

I have the honor to refer to your note of May 8, 1975 setting forth certain considerations and provisions concerning the continued cooperation of our two governments in the North American Air Defense Command, which has been governed by the agreement concluded on May 12, 1958 and subsequently renewed on March 30, 1968 and May 10, 1973.

I am pleased to inform you that my government concurs in the considerations and provisions set out in your note, and further agrees with your proposal that your note and this reply shall constitute an agreement between our two governments effective May 12, 1975.

Accept, Excellency, the renewed assurances of my highest consideration.

Richard D. Vine
Deputy Assistant Secretary of State
for Canadian Affairs

His Excellency

Appendix D

Marcel Cadieux,
Ambassador of Canada

Appendix E

CANADA Treaty Series 1980 No. 7

EXCHANGE OF NOTES BETWEEN THE GOVERNMENT OF CANADA AND THE
GOVERNMENT OF THE UNITED STATES OF AMERICA CONSTITUTING AN
AGREEMENT EXTENDING FOR ONE YEAR THE NORTH AMERICAN AIR DEFENCE
COMMAND (NORAD) AGREEMENT

I

Washington, May 12, 1980

No. 186

Sir,

I have the honour to refer to discussions which have taken place between representatives of our two Governments regarding future cooperation between Canada and the United States of America in the defence of North America through our joint participation in the North American Air Defence Command (NORAD). The principles governing the organization and operation of this Command were last set out in the Agreement between our two Governments which remains in effect until May 12, 1980.

The Canadian Government, conscious of the importance of this cooperation to the security of the Canada - United States region of NATO and to the overall security of the NATO area, wishes to provide an opportunity as it has in the past to hear the views of appropriate committee of the Canadian House of Commons on the subject. My Government, therefore, proposes that the current Agreement be extended without alteration in its present terms and conditions until May 12, 1981.

If the Government of the United States concurs in this proposal, I have the honour to propose that this Note, which is equally authentic in English and French, and your reply to that effect, shall constitute an Agreement between our two Governments with effect from May 12, 1980.

Accept, Sir, the renewed assurances of my highest consideration.

The Secretary of State
Washington, D.C.

Peter M. Towe
Ambassador of Canada

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II

Department of State
Washington

May 12, 1980

Excellency, .

I have the honour to refer to your note of May 12, 1980, and to the discussions which have taken place between representatives of our two Governments concerning the renewal of the Agreement on the North American Air Defence Command (NORAD).

The Government of the United States shares the view of the Government of Canada on the importance of cooperation between our two nations for the security of the Canada - United States region of NATO, under the arrangements embodied in the NORAD Agreement. The United States looks forward to the successful completion of negotiations and the subsequent renewal of the NORAD Agreement at an early date, to allow for timely planning for future cooperative efforts. In this regard, it would be the hope of the United States that the current negotiations could be concluded before the full year extension proposed in your note will have elapsed.

I am pleased to inform you that my Government concurs in the considerations set out in your note, and further agrees with your proposal that your note and this reply shall constitute an Agreement between our two Governments effective as of May 12, 1980.

Accept, Excellency, the renewed assurances of my highest consideration.

For the Secretary of State:
Sharon E. Ahmad

His Excellency
Peter M. Towe,
Ambassador of Canada

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CANADA Treaty Series 1981 No. 31

EXCHANGE OF NOTES BETWEEN THE GOVERNMENT OF CANADA AND THE
GOVERNMENT OF THE UNITED STATES OF AMERICA CONSTITUTING AN
AGREEMENT CONCERNING THE ORGANIZATION AND OPERATION OF THE NORTH
AMERICAN AEROSPACE DEFENCE COMMAND (NORAD)

I

*The Secretary of State for External Affairs of Canada
to the Secretary of State of the United States of America*

Ottawa, March 11, 1981

FLE-344

Sir,

I have the honour to refer to discussions that have taken place between representatives of our two Governments regarding future cooperation between Canada and the United States in the defence of North America. Our Governments remain convinced that such cooperation, conducted within the framework of the North Atlantic Treaty, remains vital to their mutual security, compatible with their national interests, and an important element of their contribution to the overall security of the NATO area.

As neighbors and allies within North America, our two Governments have accepted special responsibilities for the security of the Canada - United States region of NATO and, in fulfilling these responsibilities, have entered into a number of bilateral arrangements to facilitate joint defence activities. Among these, the arrangements for air defence, aerospace surveillance, and missile warning embodied in the North American Air Defence Command (NORAD) have provided the means of exercising effective operational control of the forces assigned by our two Governments to the aerospace defence of North America.

In the years since the NORAD Agreement was first concluded, there have been significant changes in the character of strategic weapons and in the nature of the threat they pose to North America. The most important of these changes has been the major increase in the number and sophistication of strategic missiles. There has also been an increasing use of space for strategic and tactical purposes. In addition, although missiles constitute the principal threat, long-range bombers continue to pose a threat to North America.

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In view of the continuing mission of aerospace surveillance and warning and air defence, our two Governments agree that, to properly reflect aerospace surveillance and missile warning related responsibilities, it is appropriate to redesignate NORAD as the *North American Aerospace Defence Command*.

In light of these developments, our two Governments retain a common interest in the maintenance of effective surveillance and control of North American airspace and in preventing its use for purposes detrimental to the security of North America. Since peacetime surveillance and control are expected to continue as functions important to the sovereign control of national airspace, each Government will maintain a system to carry out these activities in conjunction with the air defence and aerospace surveillance and warning operations of NORAD.

The large volume of air traffic flowing daily to, from, and within North American airspace, much of it across the border between our two countries, dictates that our national airspace surveillance and control systems be compatible with each other and requires a high degree of coordination between their military components. Our Governments agree that the necessary command, control and information exchange arrangements can most effectively and economically be provided by the continued operation of NORAD.

In addition to performing the airspace surveillance and control functions related to air defence, NORAD will monitor and report on space activities of strategic and tactical interest and will provide warning of aerospace events that may threaten North America. In view of the increasing importance of space to the defence of North America, our Governments will seek ways to enhance cooperation in accordance with mutually agreed arrangements in the surveillance of space and in the exchange of information on space events relevant to North American defence.

The primary objectives of NORAD will continue to be:

- (A) *to assist each nation to safeguard the sovereignty of its airspace;*
- (B) *to contribute to the deterrence of attack on North America by providing capabilities for aerospace surveillance, warning and characterization of aerospace attack, and defence against air attack; and*
- (C) *should deterrence fail, to ensure an appropriate response*

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against attack by providing for the effective use of the forces of the two countries available for air defence.

As in the case of all joint defence activities, the future activities envisaged for NORAD will require the closest cooperation between authorities of our two Governments. It is recognized that this can be achieved in a mutually satisfactory way only if full and meaningful consultation is carried out on a continuing basis. Our two Governments, therefore, undertake to insure that such consultation takes place.

On the basis of our common appreciation of the circumstances described and of the experience gained since the inception of NORAD, my Government proposes that the following principles should govern the future organization and operations of the North American Aerospace Defence Command.

- (A) *The Commander in Chief, NORAD (CINCNORAD), and the Deputy in CINCNORAD's absence, will be responsible to the Chief of Defence Staff of Canada and the Joint Chiefs of Staff of the United States, who in turn, are responsible to their respective Governments. CINCNORAD will function in support of the concepts of surveillance, warning, control, and defence approved by the authorities of our two Governments for the defence of the Canada - United States region of the NATO area.*
- (B) *NORAD will include such combat units and individuals as are specifically allocated to it by the two Governments. The jurisdiction of CINCNORAD over those units and individuals is limited to operational control as hereinafter defined.*
- (C) *"Operational Control" is the power to direct, coordinate, and control the operational activities of forces assigned, attached, or otherwise made available. No permanent changes of station would be made without approval of the higher national authority concerned. Temporary reinforcement from one area to another, including the crossing of the international boundary, to meet operational requirements will be within the authority of commanders having operational control. The basic command organization for the defence forces of the two countries, including administration, discipline, internal organization, and unit training, shall be exercised by national commanders responsible to their national authorities.*

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- (D) The appointment of CINCNORAD and the Deputy must be approved by the Canadian and United States Governments. They will not be from the same country, and the CINCNORAD staff shall be an integrated staff composed of officers of both countries. During the absence of CINCNORAD, command will pass to the Deputy Commander.
- (E) The North Atlantic Treaty Organization will continue to be kept informed through the Canada - United States Regional Planning Group of arrangements for the aerospace defence of North America.
- (F) The plans and procedures to be followed by NORAD in wartime shall be formulated and approved by appropriate national authorities and shall be capable of rapid implementation in an emergency. Any plans or procedures recommended by NORAD that bear on the responsibilities of civilian departments or agencies of the two Governments shall be referred for decision by the appropriate military authorities to those agencies and departments and may be the subject of intergovernmental coordination through an appropriate medium such as the Permanent Joint Board on Defence, Canada - United States.
- (G) Terms of reference of CINCNORAD and the Deputy will be consistent with the foregoing principles. Changes in these terms of reference may be made by agreement between the Canadian Chief of Defence Staff and the US Joint Chiefs of Staff, with approval of higher authority, as appropriate, provided that these changes are in consonance with the principles set out in this Note.
- (H) The financing of expenditures connected with the operation of the integrated headquarters of NORAD will be arranged by mutual agreement between the appropriate agencies of the two Governments.
- (J) The Agreement between parties to the North Atlantic Treaty regarding the Status of their Forces signed in London on June 19, 1951 shall apply.
- (K) Public statements by CINCNORAD on matters of interest to Canada and the United States will in all cases be the subject of prior consultation and agreement between appropriate agencies of the two Governments.

If the Government of the United States of America concurs in the considerations and provisions set forth herein, I have the

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honour to propose that this Note, which is equally authentic in English and French, and your reply to that effect shall constitute an agreement between our two Governments, which will enter into force on the date of your reply, with effect from May 12, 1981. This agreement will supersede the agreement on the North American Air Defence Command concluded in Washington, D.C., on May 12, 1958; and subsequently renewed on March 30, 1968; May 10, 1973; May 12, 1975; and May 12, 1980.

The present agreement will remain in effect for a period of 5 years during which its terms may be reviewed at any time at the request of either party. It may be terminated by either Government, following 12 months' written notice to the other.

Accept, Sir, the assurance of my highest consideration.

Mark MacGuigan
Secretary of State for External Affairs

Gilles Lamontagne
Minister of National Defence

The Honourable Alexander Haig,
Secretary of State of the
United States of America

II

*The Secretary of State of the United States of America to the
Secretary of State for External Affairs of Canada*

Ottawa, March 11, 1981

Sir:

I have the honor to refer to your note of this date setting forth certain conditions and provisions regarding the continued cooperation of our two governments in the North American Aerospace Defense Command, which previously has been governed by the Agreement concluded on May 12, 1958 and subsequently renewed on March 30, 1968; May 10, 1973; May 12, 1975; and May 12, 1980.

I am pleased to inform you that my government concurs in the considerations and provisions set out in your note, and further agrees with your proposal that your note and this reply shall constitute an Agreement between our two governments, with effect from May 12, 1981.

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Accept, Sir, the renewed assurances of my highest consideration.

Alexander Haig
Secretary of State of the
United States of America

The Honourable Mark MacGuigan, M.P., P.C.,
Secretary of State for External Affairs,
Ottawa.

Appendix G

CANADA Treaty Series 1985 No. 8

EXCHANGE OF NOTES CONSTITUTING AN AGREEMENT BETWEEN THE
GOVERNMENT OF CANADA AND THE GOVERNMENT OF THE UNITED STATES OF
AMERICA ON THE MODERNIZATION OF THE NORTH AMERICAN AIR DEFENCE
SYSTEM

I

*The Secretary of State for External Affairs of Canada
to the Secretary of State of the United States of America*

Quebec, March 18, 1985

JLE-0313

Sir,

I have the honour to refer to discussions that have taken place between representatives of our two Governments regarding modernization of the North American Air Defence System.

The Governments of our two countries have long held the view that measures to provide warning of aerospace attack on North America and to control access by potentially hostile aircraft to the sovereign airspace of Canada and the United States can be taken most economically and efficiently on the basis of close cooperation between them. Major elements of the existing North American Air Defence System were established jointly by Canada and the United States during the 1950s. These elements are now in the final stages of obsolescence and are proving increasingly expensive to operate and maintain. At the same time, the introduction by our potential adversaries of new bombers and cruise missiles into their strategic inventory has been improving their capabilities for air attack on North America, thereby requiring improved capabilities to detect and to deter such an attack.

Accordingly our two Governments, in the exercise of their national and mutual defence responsibilities within the North Atlantic Treaty Organization for the security of Canada and the United States, have decided to undertake a program to modernize the North American Air Defence System. The elements of this program, and the respective responsibilities of each Government, are set forth in the annexed Memorandum of Understanding on the Modernization of the North American Air Defence System, which forms an integral part of this Agreement and which was signed

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today by the Secretary of Defense of the United States and by the Minister of National Defence of Canada. It is further accepted that:

- A. the defence cooperation between our two Governments as set forth in this Agreement is based on the recognition of and full respect for the sovereignty of each;
- B. the obligation of our two Governments in connection with modernization of the North American Air Defence System are subject to the availability of funds appropriated for that purpose;
- C. the Agreement between the Parties to the North Atlantic Treaty Regarding the Status of Their Forces (NATO SOFA) signed in London on June 19, 1951, shall apply;
- D. disputes other than claims failing within NATO SOFA will be settled by consultation between the Parties and not by reference to any international tribunal;
- E. supplementary arrangements or administrative agreements consistent with the Agreement may be made from time-to-time between authorized representatives of our two Governments with the objective of furthering the intent of this Agreement;
- F. our two Governments will review the agreements and arrangements currently in effect between them relating to North American Air Defence and, as appropriate, modify or terminate them; and
- G. this Agreement may be amended by mutual consent of the Parties.

If the forgoing is acceptable to your Government, I have the honour to propose that this Note and the Memorandum of Understanding signed today, which are equally authentic in English and French, and your reply to that effect, shall constitute an Agreement between our two Governments, which will enter into force on March 18, 1985, for an initial period of ten years. The Agreement shall continue in force thereafter subject to the right of either of our two Governments to terminate it by providing one year's written notice to the other. Upon notice of termination our two Governments will enter into negotiations respecting the disposition to be made of facilities and installations and costs associated therewith.

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Accept, Sir, the assurances of my highest consideration.

JOE CLARK
Secretary of State
for External Affairs.

The Honourable George P. Shultz,
Secretary of State of the
United States of America.

II

*The Secretary of State of the United States of America to the
Secretary of State for External Affairs of Canada*

March 18, 1985

Excellency:

I have the honor to refer to your Note on March 18, 1985, setting forth certain considerations and provisions concerning the intent of our two Governments to modernize North America's Air Defense System.

I am pleased to inform you that my Government concurs in the considerations and provisions set out in your Note and further agrees with your proposal that your Note, together with its annex and this reply, shall constitute an Agreement between our two Governments effective as of March 18, 1985.

Accept, Excellency, the renewed assurances of my highest consideration.

GEORGE P. SHULTZ
Secretary of State

The Right Honorable
Joe Clark, P.C., M.P.,
Secretary of State for
External Affairs of Canada.

Appendix G

III

MEMORANDUM OF UNDERSTANDING ON THE MODERNIZATION OF THE NORTH AMERICAN AIR DEFENCE SYSTEM

PURPOSE

1. This Memorandum of Understanding (MOU), concluded on behalf of Canada by the Minister of National Defence and on behalf of the United States of America by the Secretary of Defense, has the following objectives:
 - A. to establish and record, as an agreed baseline, the components of a program to modernize the North American air defence system which, subject to the appropriation of funds by the legislatures of both countries, shall be undertaken jointly by Canada and the United States;
 - B. to establish the responsibilities, including financial, which shall be assumed respectively by Canada and the United States for the acquisition, provision and construction of equipment, facilities, and installations constituting the elements of an air defence system modernization program and for the manning, operation, and maintenance (support) thereof;
 - C. to establish a basis for future cooperation between the two countries regarding research into and development of technology (including space-based system technologies), consistent with the North American Aerospace Defence Agreement.

COMPONENTS

2. The components of the North American air defence system modernization program are:
 - A. a North Warning System (NWS) comprising 13 Long Range Radar (LRR) and 39 Short Range Radar (SRR) stations deployed across northern Alaska, northern Canada, and down the Labrador coast, and the communications system required to interface the radars to applicable Region Operations Control Centres (ROCCs); and
 - B. a life cycle support and maintenance capability for the

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- same to be established in conjunction with A.; and
- C. Over-the-Horizon-Backscatter (OTH-B) radar coverage provided from sites located within the United States; and
 - D. airborne radar coverage in North America provided by USAF Airborne Warning and Control System (AWACS) aircraft; and
 - E. Forward Operating Locations (FOLs) and Dispersed Operating Bases (DOBs) for AWACS and fighter aircraft at existing airfields in Canada; and
 - F. communications and other equipment necessary to provide connectivity with, and interoperability of, the above noted system components, and to ensure adequate command and control of intercepts in the surveillance areas.

GENERAL RESPONSIBILITIES

- 3. This Section details procurement and program arrangements and provides the basis for negotiations for those components of the system which require further definition and funding appropriations.
- 4. *North Warning System*
 - A. Canada and the United States have decided to replace the DEW line with an upgraded system to be called the North Warning System (NWS). This system will be composed of Long Range Radar (LRR) and Short Range Radar (SRR) stations. Eleven LRRs will be located in Canada (eight at existing DEW line sites). Two LRRs will be located in Alaska at existing DEW line sites. 36 SRRs will be located in Canada. Three SRRs will be located in Alaska.
 - B. Principles for sharing NWS program acquisition and installation responsibilities and costs are contained in the "North Warning System Acquisition Proposal" attached hereto.
- 5. *Over-the-Horizon-Backscatter (OTH-B) Radar System*
 - A. The United States intends to acquire, install and operate an OTH-B system. The system will be located in the United States and will consist of East Coast, West Coast, Central United States, and Alaska radars with associated

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communications. The United States will fund all costs of acquisition, installation, operations and support of the system, except as identified in item B. below. Ownership of all aspects of the system will rest with the United States.

- B. As agreed by the parties, Canada will jointly man those sites with coverage and command and control implications for the North American Air Defence mission in Canada. Details of the joint manning will be determined by the respective air staffs in consultation with CINCNORAD.

6. *Airborne Warning and Control System (AWACS) Aircraft.* AWACS aircraft have been designated from existing USAF resources to be made available in an emergency to the Commander-in-Chief North American Aerospace Defence Command. Canadian participation as crew members on United States AWACS aircraft will be coordinated by the HQ USAF and NDHQ, taking into account United States national requirements, requirements for NORAD, and USAF crew training capability.

7. *Coastal Radars.* The adequacy of the OTH-B radar system to provide coverage of Canadian and United States coastal airspace and to provide for detection, tracking, and identification which support tactical action, will be determined jointly, on advice of CINCNORAD. Any requirements for full or partial deployment of supplementary LRRs and communications on the east and west coasts of Canada and the Alaska panhandle will be determined as soon as possible following agreement by the parties that adequate operational testing of the OTH-B system has been completed.

8. *Forward Operating Locations / Dispersed Operating Bases (FOLs/DOBs).* Steps will be taken to implement minimum essential upgrades at selected northern contingency locations, to allow fighter and AWACS operations. These locations will be sited in accordance with approved NORAD operation plans to take advantage of the increased surveillance coverage provided by the modernized warning system. Minimum essential upgrades include infrastructure, e.g., alert hangars, POL storage, missile and ammunition storage, and other necessary airfield upgrades. Canada will carry out the design, construction, contracting, and management efforts associated with these sites. Conclusion of requirements definition and appropriation approvals is targeted for December 1985. Design work will commence in 1986 and construction in 1988. Each country will be responsible for providing deployment kits and support packages associated with their own aircraft.

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9. *Interoperability and Connectivity.* Requirements must be established and communications resources provided to ensure total connectivity and interoperability of the component systems contributing to North American air defence modernization.

A. North American air defence modernization component systems generate interoperability and connectivity requirements that include:

- (1) *interfacing OTH-B radar system with the Region Operations Control Centres (ROCCs);*
- (2) *a data interface between ROCCs and AWACS;*
- (3) *interfacing the NWS with the ROCCs;*
- (4) *beyond line of sight communications linking the ROCCs to fighters and AWACS;*
- (5) *the augmentation of line of sight air-ground-air communications for Command and Control purposes;*
- (6) *the acquisition of new or modified software and hardware for ROCCs to accommodate these interfaces.*

B. The United States will undertake the developments of the systems necessary to allow the NORAD Region Operations Control Centres (ROCCs) to receive and process data from the NWS, OTH-B, and AWACS.

A number of these requirements need further definition by the parties and a formal Canada/United States program baseline needs to be established before procurement action can be taken in accordance with paragraph 17.

9. *Operations and Support.* The NWS will be operated and maintained on behalf of both governments, by Canada beginning October 1989. Detailed responsibilities and requirements for operations and support of the system require further definition and agreement. Since concurrent procurement of systems spares with the ordering of the prime mission equipments should realize cost savings and facilitate logistics support during the work-up of the system to full operational status, definition of support policy should be completed as early as practicable. While it is anticipated that definition of many requirements will be completed much sooner, final definition of all requirements is expected to be completed no later than the summer of 1986.

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FINANCIAL RESPONSIBILITIES

11. The Financial responsibilities of each Government for specific components of the modernization program are outlined in this section. To the maximum extent feasible, cost sharing will be effected by allocation of function rather than by reimbursement between the Parties. However, where reimbursement is required, each country will undertake to minimize the costs to the other.
12. *North Warning System*. The costs associated with this system will be funded on a 60/40 percent, United States/Canada principle. In general this funding principle will match the general program responsibilities. Specific funding responsibilities of Canada and the United States under this proposal are outlined in the Acquisition Proposal appended to this MOU.
13. *Over-the-Horizon-Backscatter (OTH-B) Radars*. The system will be funded totally by the United States. Canadian personnel related costs will be borne by Canada.
14. *Airborne Warning and Control System (AWACS) Aircraft*. The costs of operating the AWACS aircraft will be the responsibility of the United States. All related costs of participating Canadian crew members will be borne by Canada.
15. *Coastal Radars*. If there is a joint determination, on the advice of CINCNORAD, of a joint requirement for coastal radars, both governments will undertake best efforts to negotiate a cost sharing agreement in accordance with a 60/40, United States / Canada principle to the maximum extent feasible.
16. *Forward Operating Locations (FOL) / Dispersed Operating Bases (DOB)*. Canada and the United States will jointly determine what constitute "minimum essential upgrades" to selected interceptor and AWACS FOL/DOBs. Bearing in mind the cost-sharing principles identified above, Canada and the United States will evaluate opportunities for Canada/United States cooperation in the construction of FOL/DOBs -- to meet NORAD operational requirements in Canada -- with a view to the United States contributing toward the cost of the FOL/DOBs. The results of this evaluation will be made available to the North American Air Defence Responsibilities Sharing Steering Group by 31 December 1985 and will be used as the basis for cost sharing negotiations.

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17. *Interoperability and Connectivity.* After a formal program baseline is established, both countries will undertake to discuss appropriate procurement actions.

18. *CADIN-Pinetree Line.* Canada and the United States intend to terminate the CADIN-Pinetree agreements based on the following principles.

- A. Such funding as the United States makes available for CADIN-Pinetree will be terminated no later than September 30, 1988.
- B. Canada and the United States will negotiate the sharing of CADIN-Pinetree closure costs on a basis of 55% United States / 45% Canada. The elements of expense subject to cost sharing will be defined by agreement.

19. *Operations and Support.* The operations and support of the different components of the modernization programs are to be shared on the following basis:

- A. *North Warning System* - 60/40 United States/Canada (To the maximum extent feasible, cost sharing will be effected by allocation of function rather than by reimbursement between the parties, due regard being paid to logistics impacts and life cycle cost minimization. Cost sharing for support of NWS LRRs will commence as the sites become operational, 1 October 1988. Cost sharing for the NWS SRRs will commence when all SRR stations reach Full Operational Capability (FOC), 1 October 1992. Prior to these dates, each country will provide maintenance and support for the system components it acquired):
- B. *FOLs/DOBs* - Canadian responsibility with United States paying incremental costs of United States deployments as per existing NORAD agreements.

20. *Advanced Technology.*

- A. Canada and the United States will establish effective means of cooperation in research into, and development and employment of advanced technologies for future North American surveillance, warning, communications, and defence systems consistent with the North American Aerospace Defence Agreement. The first step in this direction will be designation of this subject as a permanent agenda item of the PJBD and DD/DPSA Steering Committee meetings.

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- B. Both countries will have continued opportunities to compete for participation in each other's developments.

ADDITIONAL PROVISIONS

21. It is agreed that:

- A. the defence cooperation between our two Governments as set forth in this Memorandum of Understanding is based on the recognition of and full respect for the sovereignty of each;
- B. the obligations of our two Governments in connection with the modernization of the North American Air Defence System are subject to the availability of funds appropriated for that purpose;
- C. the Agreement between the Parties to the North Atlantic Treaty Regarding the Status of Their Forces (NATO SOFA) signed in London on June 19, 1951 shall apply;
- D. disputes other than claims falling within NATO SOFA will be settled by consultation between the parties and not by reference to any international tribunal;
- E. supplementary arrangements or administrative agreements consistent with this Memorandum of Understanding may be made from time-to-time between authorized representatives of our two Governments with the objective of furthering the intent of this Memorandum of Understanding;
- F. our two Governments will review the agreements and arrangements currently in effect between them relating to North American Air Defence and, as appropriate, modify or terminate them; and
- G. this Memorandum of Understanding may be amended by mutual consent of the Parties.

IV

TERMS OF CANADIAN - UNITED STATES AGREEMENT IN PRINCIPLE ON
NORTH WARNING SYSTEM ACQUISITION PROPOSAL

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In order to enunciate clearly the responsibilities of Canada and the United States in acquiring the North Warning System (NWS), this document specifies responsibilities for both governments during the system acquisition process. The NWS project baseline is represented by Electronic Systems Division (ESD) System Specification ESD-SS-NW-2448 dated 17 March 83, modified up to and including Specification Change Notice (SCN) No. 5 dated 13 April 84. Changes to the baseline will be subject to further negotiations and availability of funds.

The acquisition of the NWS is to be accomplished in two phases. In Phase I, 13 Long Range Radar (LRRs) will be procured and 10 installed at existing DEW sites (eight in Canada and two in Alaska) and three at new sites in Canada (Labrador). The Short Range Radar (SRR) and station will be developed and tested. One prototype will be fielded to an Alaskan site for Initial Operational Test and Evaluation (IOT&E) and one to a Canadian-provided site for integration and testing. A logistics station will be established in Alaska. New communications links for NWS will be designed and tested. In Phase II, 37 more SRRs will be procured and deployed to two sites in Alaska and 35 sites in Canada. Five logistics stations will be located in Canada. Construction and equipping of all LRR and SRR stations will be completed.

As specified below, the United States will act as overall system manager and integrator for the Phase I effort and Canada will act as overall system manager and integrator for the Phase II effort. In both phases, however, each government will work closely with the other in accomplishing their respective responsibilities.

The established operational capability dates will be maintained (IOC - defined as 10 Long Range Radars operating at existing DEW Line sites, of which two are in Alaska and eight in Canada - no later than September 30, 1988; FOC no later than September 30, 1992). The specific responsibilities of the United States under this proposal are:

1. PHASE I

- A. Provide overall system management and integration less the three LRRs on the Labrador coast.
- B. Procure 13 LRRs.
- C. Transport, install and check-out 10 LRRs and integrate with associated on-station communications in existing

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DEW Line facilities (eight in Canada; two in Alaska), and modify and provide necessary facilities at the existing DEW Line sites.

- D. Transport, install and check-out three LRRs at new sites, to be made ready by Canada for occupancy by 31 October 1988, in Labrador and turn over to Canada for integration with other NWS sub-systems.
- E. Develop and test two prototype SRRs.
- F. Provide facilities design criteria and communications interface requirements for the NWS.
- G. Provide overall system specifications, to include interface and communications requirements, for the NWS.
- H. Establish a logistics station in Alaska.
- I. Establish one integrated prototype SRR station in Alaska for IOT&E.
- J. Provide, install and check-out one prototype SRR at a designated Canadian site for Canadian integration and testing of Canadian provided facilities and communications.

2. Phase II

- A. Provide 37 production SRRs, including radar controller equipment.
- B. Transport, install and site adapt, if necessary, the 37 SRRs at two sites in Alaska and 35 sites in Canada. Relocate and/or refurbish to production standard if necessary, the SRR from Canadian prototype SRR station to operational site.
- C. Procure radar performance monitoring displays and maintenance aids for five logistic stations in Canada except internal communications at DEW Line LRR sites.
- D. Procure and install facilities and communications for SRR stations in Alaska and communications equipment for LRR stations in Alaska.

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- E. Procure Ground/Air/Ground radios and crypto equipment as determined by the operational requirement.

The specific responsibilities of Canada under this proposal are:

1. Phase I

- A. Design, consistent with the provisions of paragraphs 1.f and 1.g above, construct, and equip (except for external communications) three new LRR sites in Labrador, (to be made ready for occupancy on 31 October 1988) including integration of LRRs provided by the United States into the NWS.
- B. Design consistent with the provisions of paragraphs 1.f and 1.g above, and qualification test communications and facilities for use in LRR, SRR and ROCC sites in Canada.
- C. Establish and equip (except for SRR) the Canadian prototype SRR station.

2. Phase II

- A. Perform overall system management, system level test and integration consistent with design criteria, specifications and interface requirements developed during Phase I.
- B. Construct 36 SRR stations in Canada and integrate SRRs provided by the United States.
- C. Procure and install the communications equipment for SRR and LRR stations and ROCCs in Canada.
- D. Establish and equip (except radar monitoring and control equipment) five logistics stations in Canada.
- E. Relocate if necessary, Canadian prototype SRR station (excluding SRR) to operational site.
- F. Install, integrate and test Ground/Air/Ground radios and crypto equipment provided by the United States at three new LRRs and the Canadian SRRs and crypto equipment at

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all other Canadian locations (United States will install A/G/A radios and DEW Line LRRs).

Subject to availability of appropriated funds, each government will bear the cost of accomplishing its responsibilities as stated above. If the two governments agree that the three LRR stations to be constructed by Canada in Labrador cannot be located at formerly occupied sites for operational reasons, the additional cost associated with alternative sites will be negotiated.

Both parties undertake to make every effort to avoid program or schedule changes that will cause increased cost to the other government. If changes or delays by either government in fulfilling its responsibilities under this agreement will cause increased cost to the other governments, Canada/United States Steering Group will consult immediately and, if mutually agreeable, amend the responsibilities in this document to meet the anticipated increased cost.

The two governments have entered into this understanding and allocation of program responsibilities based on the assumption that the United States will fund \$665 million (constant United States FY 85 dollars) of estimated NWS program costs and Canada will fund \$418 million (constant United States FY 85 dollars) of estimated NWS program cost. If in the course of carrying out the acquisition program, it appears that one government is bearing more than its intended share of the costs, the parties will consult with a view towards realigning their program responsibilities and corresponding costs in order to preserve the intended NWS cost sharing formula.

Neither government is authorized to (1) incur obligations for the other government, (2) modify the other government's obligations or (3) expend the funds of the other government, without the prior written agreement of the other government.

Each government will retain ownership of all equipment and transportable facilities which it funds.

The Canadian and the United States NWS program offices will adhere to the following:

A Joint Senior Review Council will be established to monitor and, where necessary, direct the overall project management process. The Council will be co-chaired by NDHQ/DGCEEM from Canada and the ESD Deputy Commander Strategic Systems from the United States. The Council will be the forum for referral of

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problems encountered by the Project Managers which are beyond their authority to resolve.

The Canadian and the United States Project Managers will develop a Statement of Agreement (SOA) which details their respective objectives, their separate responsibility charters and their consultation and co-ordinating relationships. This document will also contain the structure and membership of any joint project working group formed to facilitate implementation of this project.

In the event of conflict between the Acquisition Proposal and the Memorandum of Understanding on the Modernization of the North American Air Defence System, the MOU will prevail.

Done in duplicate, in the English and French languages, each language version being equally authentic, at Quebec City, this 18th day of March, 1985.

ERIK NEILSEN
For the Government of Canada

CASPAR WEINBERGER
For the Government of the United States of America

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SCEAND Report On NORAD

CONCLUSIONS AND RECOMMENDATIONS

The terms of reference of the Committee - "to consider Canadian policy with respect to future defence cooperation with the United States in the North American region with particular reference to air defence and related arrangements embodied in and flowing from the North American Aerospace Defence Agreement" - allowed for a wide-ranging inquiry. The time frame for the study did not. As a result, the Committee has had to remain general in many areas and has focused on the immediate issues of Canada - U.S. aerospace defence cooperation and NORAD's renewal.

A> General

Most Canadians recognize that Canada can no more abstain completely from planning its defence jointly with the United States than alter the facts of geography which place it in a location of critical strategic significance for the United States and in the flight path of the superpowers' ICBMs and bombers. The threat to us is the same as the threat to our southern neighbour: a nuclear attack. Our defence arrangements reflect this. The primary function of the radar systems in Canada's North is to provide early warning of an air attack on North America, and at sea Canadian maritime forces provide surveillance against Soviet submarines. Deterrence depends on timely warning, but it also rests on the capacity of the United States to deliver an offensive response. This situation makes some Canadians uncomfortable; it should not. It conforms with our national interest: like all Western nations, we rely for our security on the U.S. nuclear deterrent. Its credibility can only be enhanced if adequate warning and surveillance of the air and sea approaches to North America are maintained.

Most Members endorse Canada's traditional policy of support for both stable deterrence and arms control as the best means of ensuring lasting international peace and security. They are encouraged by the renewal of arms control negotiations and by the proposals of both the United States and the Soviet Union for deep cuts in nuclear arsenals. They accept the fact, however, that even deep cuts will not rule out the danger of nuclear war. Therefore, in its majority, the Committee recognizes the need to maintain deterrence and is untroubled by activities designed to strengthen it. Canada is not a neutral state. History, tradition, and shared values place us squarely in the Western camp, and most Members agree with Prime Minister Mulroney that

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We must realize that our sovereignty and territorial integrity cannot be safeguarded by mere proclamation or protest....We require a military capacity to respond to the threats posed by clandestine incursions into our waters, or probes of our airspace. This is not a question of political expedience or choice. It is a question of responsible national policy.¹

Accordingly, the Committee recommends:

- * that the government continue its policy of close defence cooperation with the United States in the North American region and that, where appropriate, it seek ways of rationalizing or augmenting Canada's defence effort to maximize its contribution to deterrence.

The Committee further recommends:

- * that Canada's defence budget should be increased gradually to bring it closer to levels achieved by Canada's European allies.

B> Institutions

The majority of the Committee realizes that, in defence as in other fields, the quality and vigour of Canada - U.S. relations depend at least as much on informal and ad hoc arrangements as on formal structures. Indeed, the tone and dynamism of the North American partnership are largely independent of institutions. Most Members are, nevertheless, of the opinion that if the PJBD were to regain its past prominence, it could provide Canada - U.S. defence cooperation with a clearly identifiable focus and, perhaps, help dispel the impression wrongly held by some Canadians that NORAD has taken on more responsibilities than it was meant to in the formation of the North American defence policy.

C> Defence Development / Defence Production Sharing Agreements

Most Members of the Committee are of the opinion that, generally speaking, the DD/DPSA have served both North American countries well over the years. They are, however, disturbed by evidence that these arrangements have been eroded by a variety of well-intended unilateral measures of which the full impact across the border fails to be appreciated in the country where they are taken. The majority of the Committee agrees with the

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representatives of Canadian industry who came before it to underscore their concern over U.S. set-aside programs such as the Small Business Act and other "Buy American" statutes and regulations. A court of appeal has recently suspended a lower California court ruling making it unlawful for personnel of Canadian corporations to enter the United States to install or service equipment sold by Canadian firms.² Members are distressed that the problem arose at all, however, and are concerned that the initial ruling could be reinstated at some other level of the judicial process. Difficulties such as these make Canadian products unattractive to prospective U.S. buyers.

The majority of Members recognize that the industrial benefit packages referred to as "offsets" contribute to eroding support for the DD/DPSA in the United States and do not fully achieve their objectives in Canada when they are not limited to defence procurements.

The DD/DPSA is in and of itself an "offset" arrangement in that it calls for Canadian defence purchases in the United States to be offset by American defence purchases in Canada.³ Members also agree with Danford Middlemiss's assessment that, over the next several years, the current imbalance in the DD/DPSA account will likely correct itself.⁴ The deficit recorded in the past few years seems to have more to do with the magnitude of the re-equipment program of Canada's armed forces than with any lack of success of Canadian companies in getting contracts in the United States.

In light of the evidence before it and of the importance of the DD/DPSA to the development of a North American defence industrial base, and bearing in mind the reaffirmation by Prime Minister Mulroney and President Reagan at Quebec City of "the importance of access to, and participation of, Canadian firms in the U.S. defence market"⁵, the Committee recommends:

- * that Canada and the United States complete as soon as possible the examination of the issues relating to the Defence Development and Defence Production Sharing Agreements agreed to at Quebec City on March 18, 1985;

- * that the government of Canada continue to press U.S. authorities to find a permanent solution to the troubling situation where Canadian firms were barred and may in future be barred again from installing or servicing the equipment they sell in the United States;

- * that the government of Canada request that the U.S.

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administration better publicize the DD/DPSA among procurement officers of the U.S. Department of Defense; and

* that the government of Canada spare no effort to impress upon the various branches of the U.S. government that the vast majority of Canadian manufacturers are smaller than most of those U.S. firms that the U.S. Small Business Act is intended to protect.

D> Military Cooperation on Land

Members are aware of a number of plans and joint exercises for land operations in the Arctic. They are impressed by the formidable difficulties a potential enemy would encounter in attempting to mount and sustain a significant land operation in or through Canada's northern territories. The Committee believes that the probability of such an attack ever being staged is remote. Most Members are equally impressed, however, with the daunting challenge that would face the very limited Canadian forces given responsibility to plan, provide for, and prosecute effective defensive operations against even diversionary enemy operations in the North, such as small lodgments. The Committee recommends:

* that the government take steps to ensure greater availability of Canadian personnel and equipment for land operations in defence of Canada's North, and that it consider assigning responsibility for the performance of some of these missions to the Canadian Rangers and the Militia.

E> Military Cooperation At Sea

A majority of Members agrees that the air-breathing threat to North America has become more diverse as a result of the introduction of longer range submarine-launched cruise missiles. Air attacks against targets on this continent are no longer largely confined to strikes from the north. They could also come from east and west.

Members are generally satisfied that bilateral and NATO arrangements for the defence of the Atlantic approaches to North America are adequate even though Canadian resources are scarce. They are not as encouraged, however, by the situations prevailing in the two other oceans bounding Canada. In the Pacific, cooperation may be satisfactory, but the Committee is alarmed by the lack of resources that would be available to carry out, in a crisis or wartime, the contingency plans worked out and exercised

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in peacetime. In the Arctic, the Committee fears that even cooperation leaves something to be desired. The Committee recommends:

- * that the government of Canada urgently plan for a major re-equipment of Canada's maritime forces in the Pacific and for the acquisition of the materiel necessary to remedy deficiencies in the Atlantic fleet which recent procurement programs will not alleviate. Canada's navy requires additional modern frigates, new submarines and marine helicopters, mine-countermeasure vessels, patrol vessels, and a larger fleet of patrol aircraft;
- * that the government consider negotiating with the United States a joint arrangement for the defence of the Arctic Ocean committing both nations to maintain underwater and other systems for the detection of submarines; the United States would concentrate on the outer periphery and Canada on the waters of the Canadian Archipelago; and
- * that Canada and the United States take steps better to integrate command, control, and communications systems with responsibilities for the aerospace and maritime defence of North America, so that real-time information about Soviet ballistic and cruise missile submarines in Canada's Atlantic and Pacific sub-regions as well as in the Arctic can flow directly to the Canadian Region Operations Control Centres at North Bay and to NORAD headquarters.

F> Military Cooperation in Air and Space: NORAD

1. NORAD Renewal

As mentioned in Chapter V, there is relatively little opposition to the traditional NORAD functions of airspace surveillance, air defence and missile warning. There is even a consensus of sorts that the new agreement should be for about five years. But most witnesses in the disarmament movement and a fair number among academics make their consent to NORAD's renewal conditional on extremely stringent terms with respect to U.S. strategy, SDI, SDA 2000, command arrangements, the modernization of NORAD, the protection of Canadian sovereignty and, especially, the "ABM clause".

The Committee has given due consideration to the conditions suggested. By and large the majority finds them unacceptable: most seek to remedy problems which do not exist at present or are

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clearly unrelated to NORAD. Many would have us dictate to the United States in areas wholly within the scope of its national prerogatives.

With respect to the major reservations identified in Chapter V, the Committee has concluded as follows:

(a) U.S. Strategy

The majority of the Committee is unconvinced that U.S. strategy has changed to the extent that it no longer relies on offensive retaliation and MAD as the basis for deterrence. Members recognize that when considered in conjunction with planned procurements, certain U.S. announcements give ground for concern that such a change is actually contemplated in Washington. Yet most would point out: (1) that the procurements in question are required by the obsolescence of existing systems; (2) that these procurements have either not begun or not been completed; (3) that they may be significantly affected by the Geneva negotiations on strategic nuclear weapons, at least in the longer term; and (4) that the United States and NATO have parallel policies. The United States could not, therefore, radically modify its strategic doctrine without the concurrence of the allies unless it were prepared to risk a particularly divisive crisis in Alliance relations and perhaps the demise of NATO.

(b) SDI

New apprehensions tied to SDI have arisen recently with regard to Canadian sovereignty. The fear is that Canada will have to accommodate greatly increased air defences if effective ballistic missile defences are deployed and that Canada will be asked to deploy ground-based BMD systems on its territory because these weapons will only be effective if they can be placed closer to the Soviet Union than U.S. territory would allow. The Committee is of the opinion that Canada should monitor closely any developments in that area, but the majority considers the specific concerns expressed premature. No one can say with certainty what systems it may become possible to deploy, and it is by no means a foregone conclusion that Canadian territory would be required; Alaskan locations and seabased platforms might do just as well, for example.

The majority of the Committee agrees with the government's positions that SDI research is prudent. Some Members however, feel strongly that the government erred in deciding that "Canada's own policies and priorities do not warrant a

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government-to-government effort in support of SDI research". They agree with the witnesses who argued that the North American defence is indivisible, that only ballistic missile defences can guarantee that nuclear weapons are rendered obsolete, and that Canada has handicapped its defence industries wishing to take part in SDI research by ruling out government-to-government participation. Other Members disagree and suggest that the government's decision should be extended to prevent participation of Canadian industrial firms and universities in SDI research.

The majority of the Committee was generally unconvinced by the links some witnesses sought to establish between SDI and NORAD. NORAD is the here and now; for the foreseeable future SDI will be nothing more than a research program. Moreover, although it does not seem likely, SDI may become negotiable at Geneva or elsewhere if President Reagan or his successor decides it stands in the way of a favourable resolution of strategic arms reduction talks. Finally, there are no reasons to suspect that the United States would proceed to unilateral deployment after giving commitments to its NATO allies on numerous occasions that it would first negotiate with the Soviet Union.⁶

(c) SDA 2000

The conceptual planning exercise known as SDA 2000, Phase II, has caused much concern, given the plain like it establishes between air and ballistic missile defence⁷ - should the latter prove both feasible and non-negotiable. Most Members agree with witnesses who would sooner have Canadians involved in the conceptual stage of this planning than on the sidelines.

(d) Command Arrangements

Command arrangements are what the North American Aerospace Defence Command - i.e. NORAD - is all about. Its establishment in 1958 marked the culmination of joint planning for the air defence of North America. The majority of the Committee came away from visits of the central and Canadian headquarters of NORAD, numerous meetings with Canadian staff and line officers, and hearings across the country convinced that a combined command is in the interest of both countries.

Other, less integrative arrangements are conceivable and functioned quite satisfactorily until 1957. This option is always available to Canada, should it feel uncomfortable with directions taken in the United States. But most Members see nothing to be gained at present from the dismantlement of the NORAD Command. Indeed, the concern of some Members in the majority is not that

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the integration of Canadian and U.S. aerospace defence forces has progressed too far, but rather that some of NORAD's traditional functions may be turned over to the new Unified Space Command, which will support NORAD but not be one of its components. This could diminish the scope for Canadian involvement and would become especially serious if the United States decided to put different officers in charge of the USC and NORAD. Not only could questions arise as to who operates in support of whom - CINCNORAD or CINCSPACE - but Canadian officers might find their access to information about space reduced, especially when the Baker-Nunn camera at St. Margaret's, N.B. is phased out in 1988 and Canada ceases to perform any military space-related role.

The majority of the Committee sees nothing ominous in the establishment of the U.S. Unified Space Command. Its forerunner, the USAF Space Command, was planned and in existence before the Strategic Defence Initiative was ever mentioned.

(e) Modernization of NORAD Systems in Canada's North

A majority of the Committee is convinced that the planned upgrading of NORAD's peripheral air defence systems, especially in Canada's North, is entirely justifiable given the advanced stage of obsolescence of the existing system and actual or expected qualitative improvements in the capabilities of Soviet bombers and cruise missiles.

Members agree with the many witnesses who argued that there is little point in expanding NORAD's capability to negate air-breathing attacks by adding a larger number of interceptors. Most reject, however, contentions that existing plans aim to give NORAD more than what is strictly necessary to deny Soviet planners a "free ride". They find especially mistaken and unhelpful the suggestion that the real purpose of the planned modernization is to provide U.S. strategists with the option to carry out a first strike and to stop a Soviet retaliatory bomber strike. Even if one assumes that, within the lifespan of the N.W.S., means could be found to execute a first strike that could destroy all Soviet ICBMs, retaliation would certainly come from SLBMs - against which NORAD can do nothing.

Likewise, the requirements for Forward Operating Locations has been misinterpreted. Interceptors will be needed in the North to ensure positive identification of unknown aircraft before they reach points from which Soviet bombers could release long-range cruise missiles. Most Committee members fail to understand the concerns voiced by many disarmament group representatives. The limited size of Canada's air defence force is well known, and

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current plans call for nothing more than random deployments of CF-18's to the FOLs. U.S. F-15s, admittedly will also train at the FOLs, but while there they will be under Canadian operational control: furthermore, it is not intended that they become a semi-permanent presence in the North. Concerning the F-15s, the majority of Members also wish to highlight official denials that they could operate from Canadian bases or FOLs in an ASAT mode. First, as General Herres and others pointed out, ASAT is simply not a NORAD role and, therefore, ASAT missions could not be performed from Canada's territory or airspace unless specifically authorized under a separate Canada - U.S. agreement. Second, to carry out ASAT operations the F-15s would require ground support which is not and will not be available at Canadian facilities, and which could not be deployed to those facilities on short notice.^a

(f) Sovereignty

A majority of the Committee believes that NORAD enhances sovereignty. It allows us to control movements into and out of our national airspace at far less cost than if we had to provide peripheral radar systems of our own. NORAD has also been responsive to our sensitivity about sovereignty over the years. For example, NORAD region boundaries have been reconfigured to follow national borders, and control of all movement in Canadian airspace has been turned over to the ROCCs at North Bay. Unlike DEW Line sites, the new radar stations which will replace them will not be U.S. operations; they will be a Canadian responsibility. Even strictly U.S. systems, such as the OTH-Bs and the AWACS made available to NORAD by the USAF, are or will be partly manned by Canadians because they help gather data on events occurring in Canadian airspace.

It may also be worth remembering that NORAD has spared us the misunderstandings which might have arisen in our bilateral relations with the United States if Americans had been uncertain about the quality of our aerospace defences - and perhaps tempted to test them or to pressure us into investing far more in them.

(g) Impact of Withdrawal

Despite the equanimity of those who are prepared to see Canada withdraw from NORAD, the majority of the Committee is convinced that the impact of a refusal on our part to renew NORAD would be highly detrimental to Canada and Canada - U.S. relations. The effect would be felt across the board and would be especially nefarious in the short term: 1986 is a Congressional election year and, given that protectionist pressures are

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especially strong at present, the proponents of protectionism can be counted on to use whatever grist available for their mills.

(h) Recommendations regarding the NORAD Agreement

For all these reasons, the Committee recommends:

- * that the government of Canada renew the NORAD Agreement for a period of five years with no substantial modifications in the thrust of the document⁹; and
- * that the government of Canada accept the invitation of the United States to participate in the conceptual planning exercise known as "SDA 2000, Phase II".

2. The Special Case of the "ABM clause"

The majority of the Committee wholeheartedly agrees with John Gellner, the editor of the *Canadian Defence Quarterly*, that "whether the ABM Treaty survives or not, the air defence of North America...must go on".¹⁰ It agrees with the argument apparently endorsed by the government in 1981 that ballistic missile defence and NORAD are separate issues. But in the hope that it will help allay public concerns, the Committee recommends:

- * that the government consider inviting the United States to issue at the time of the renewal of the NORAD agreement a joint declaration reaffirming both countries' commitment to deterrence and strategic stability, as well as their support for the integrity of the ABM Treaty and a negotiation process leading to verifiable reductions or armaments.

3. NORAD Resources

Most members support the plans for NORAD modernization approved at Quebec City on March 18, 1985. The radars around the periphery of North America and the communications links between the radar sites, command centres, and aircraft are being upgraded so that they can cope with an improved low-flying air-breathing threat, and air defence interceptor squadrons are being re-equipped with better aircraft. Members are not aware of any particular personnel shortfalls. Some, however, are uneasy about the lack of airborne warning and control assets. Not only are no USAF AWACS dedicated to NORAD, but Canada has none of its own. Once the Pinetree Line is dismantled, we will have no means of controlling uncooperative air traffic, intruders, or stray aircraft in most of our airspace north or south of the 700 km band of territory covered by the radars of the NWS.

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This situation should not be over-dramatized. It is not a security concern, since the radar coverage around North America should make it extremely difficult for attacking bombers to go unnoticed. But the majority of the Committee is concerned about the lack of means available to Canada to ensure its sovereignty in its airspace north of the 70th parallel as well as between the NWS and the U.S. border. Members know that AWACS are extremely costly to purchase, maintain, and operate, but evidence suggests that cheaper aircraft and even airships could be used in an airborne surveillance role for sovereignty if not for all defence missions. The Committee therefore recommends:

- * that the government examine the various options available for the performance of airborne surveillance and control missions and consider acquiring a number of platforms to carry out such missions in support of Canadian sovereignty, and in support of NORAD if required, over the Arctic Archipelago and between the peripheral radar lines and the U.S. border.

4. Space Considerations

Even disarmament groups and organizations such as the Committee for a Nuclear-Free North, Western Arctic New Democrats joined the majority of the witnesses in supporting some forms of Canadian defence space activities. The exact functions such a program would help perform were not always made clear, but a distinct consensus emerged about the need for space surveillance and communications. Other roles mentioned for Canadian satellites included search and rescue, navigation, meteorology, oceanography, and arms control verification. Some groups also called on Canada to revive the dormant proposal for an International Satellite Monitoring Agency initially made by France at the tenth special session of the U.N. General Assembly, devoted to disarmament, in 1978.

The Committee readily endorses many of the arguments put forward in favour of a Canadian space program. There is no doubt in the minds of most Members that it would help keep Canada at the forefront of research in crucial areas of technology, such as artificial intelligence, robotics, remote sensing, and satellite design. It seems equally clear to the majority of the Committee that, without a vigorous military component in this space program, Canada stands to deal itself out of NORAD activities in which it has heretofore been involved. As Wesley Wark indicated, this might result in a further erosion of our influence in NORAD

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and a corresponding loss of access to information of significance to Canada.¹¹ Albert Legault of Laval University made a related point by emphasizing that technology is diminishing Canada's importance to the United States in all areas except identification and interception.¹² Admittedly, the United States has given no indication that it intends to freeze us out - but it has made no signs either that it would prevent us from doing so ourselves.

The majority of the Committee is aware of the potential of a military space program and of the possibilities which exist, in most areas of interest of Canada, to combine our military and civilian efforts. It is also cognizant of the Canadian commitment to finding solutions to the verification problems that have plagued arms control negotiations. Global security would increase if these problems could be resolved. For these and other reasons already noted, the Committee recommends:

- * that the government of Canada undertake to launch without delay a Canadian military space program, corresponding to clear Canadian defence priorities and requirements, for the purpose of improving: the surveillance of our internal airspace, our land mass, and the oceans bounding Canada; our search and rescue capabilities; our communications and navigation systems; and to complement the surveillance, warning and communications capabilities of NORAD;
- * that this program be structured with the definite intent to provide support for the activities of civilian government departments; and
- * that this military space program be coordinated with other Canadian space initiatives under the general supervision of a Canadian Space Agency.

G. OTHER CONCLUSIONS and RECOMMENDATIONS

1. The North

The Committee was impressed by the concerns of northern officials over the lack of radar coverage "north of 70". Clearly, this problem should be remedied, for both security and sovereignty reasons. But in view of the time needed to prepare the necessary sites, and of the cost of building and equipping a significant number of new radar stations, the Committee is not prepared to recommend that ground-based radars should be installed to extend North Warning System coverage to the outer periphery of the Archipelago. In the short- to mid-term, the

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airborne early warning platforms called for in one of the foregoing recommendations could alleviate the problem. In the longer term, the Committee sees the Canadian military space program also recommended above as the only effective and viable solution to the problem.

Members are sympathetic to the environmental, social, and economic concerns of northerners. Although aware that the matters in question are complex and require careful examination, they are convinced that sensitivity and goodwill can go a long way towards providing solutions. It would probably never occur to even the most fair-minded southern Canadians that low-level jet training during the caribou calving season is a problem. The Committee was told that it is a significant one for those who depend to a large extent on the caribou for their livelihood. The Committee believes that many issues of this type would lend themselves to reasonable and rapid solutions with increased participation of northerners in the policy-making process. The Committee recommends:

- * that the government seek to involve northern communities more closely in the planning of defence activities in the North.

Canada must also give itself better means of asserting and enforcing its sovereignty over the waters of the Arctic Archipelago. This capacity will become ever more crucial over the next 10 or 15 years and should be expanded as commercial development of Arctic resources progresses. Accordingly, the Committee also wishes to express its support for the government's decision to build a class-8 icebreaker.

2. The Reserves

Concerns about the reserves have been addressed in several of the foregoing recommendations. Members are sympathetic to their plight; therefore the Committee strongly recommends:

- * that the government review the recommendations contained in its 1981 report entitled Action for the Reserves and consider acting upon the recommendations which have so far not been implemented.

3. Parliament

The Committee is gratified to have had this opportunity to make known to the government its views on the future of Canada - U.S. defence cooperation and NORAD. The majority understands but

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does not share the minority's concern that the Committee will not have an opportunity to examine the actual text of the agreement prior to its being signed; such a procedure would, as the Hon. Erik Nielsen indicated, institute a fundamental change in government decision making.¹³ The Committee recognizes that it was given a great deal of information on a wide range of topics. It continues to be concerned, however, that it should receive all of the necessary information relevant to studies at hand. The Committee recommends:

- * that in future the government continue to seek parliamentary committee advice ahead of NORAD renewals, and the such studies be undertaken by Parliament fully a year before the expiry of the agreement.

The Committee further recommends:

- * that the appropriate parliamentary committees be kept fully abreast of matters pertaining to national defence - subject to proper arrangements being worked out to respect the national security interests of Canada and its allies; and
- * that the Department of National Defence immediately implement procedures to ensure that its active records are free of outdated information concerning Canada's agreements with other countries.

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1. Prime Minister Brian Mulroney. "In Pursuit of Peace", notes for a speech to the Consultative Group on Disarmament and Arms Control, October 31, 1985, Ottawa, P. 2.
2. Hansard, December 20, 1985, Winegard-Kelleher, P. 9667.
3. Professor Danford Middlemiss, Proceedings, November 28, 1985, P. 50:8.
4. Ibid., P. 50:15.
5. Quebec City Declaration by the Prime Minister of Canada and the President of the United States, March 18, 1985, P. 1.
6. See Appendix I.
7. Proceedings, December 6, 1985, P. 52:10.
8. Ibid., December 11, 1985, P. 54:36.
9. See Appendix G.
10. Proceedings, November 20, 1985, P. 46:37.
11. Ibid., October 31, 1985. PP. 41:109 and 41:113.
12. Ibid., November 20, 1985, PP. 46:45-6.
13. Proceedings, December 13, 1985, PP. 56:17-18.

Appendix I

Excerpts From Two Statements By The Secretary of State For External Affairs On Matters Relating to the ABM Treaty*

A> January 21, 1985 (Hansard, P. 1502)

As the program is presently understood, research on SDI does not contravene the provisions of either the 1967 Outer Space Treaty or of the 1972 Anti-Ballistic Missile treaty, both of which Canada strongly supports. In light of significant Soviet advances in ballistic missile defence research in recent years and deployment of an actual ballistic missile defence system, it is only prudent that the West keep abreast of the feasibility of such projects.

However, actual development and deployment of space based ballistic missile defence systems by either side would transgress the limits of the ABM Treaty as currently constituted. That could have serious implications for arms control and would therefore warrant close and careful attention by all concerned. We welcome in this regard President Reagan's affirmation that the U.S.A. would not proceed beyond research without discussion and negotiation.

B> January 23, 1986 (Hansard, P. 10101)

To deviate from a policy of full compliance is to threaten the credibility and hence the viability of arms control. Canada firmly supports the regime created by the ABM treaty and the existing SALT agreements on limiting strategic forces. Our stance toward SDI research is rooted in the need to conform strictly with the provisions of the ABM treaty. We will continue to urge the parties to these treaties to do nothing to undermine their integrity but, rather, to reinforce their status and their authority.

* The Secretary of State for External Affairs also elaborated on Canada's position with regard to the ABM Treaty during his meeting with the Committee. (See Proceedings, December 4, 1985, P. 51:16).