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Item Description: This document is a typed paper that Lindsey wrote concerning the past and present roles of NORAD. In this document he explains the relevance of NORAD to Canadian defence policy at the beginning of the twenty-first century.

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HOMELAND DEFENCE AND CANADIAN SOVEREIGNTY

With her potential enemies distant far from her shores, and sharing the vast area of North America with a powerful friendly neighbour, Canada did not have to face major threats of attack on her territory throughout the first half of the Twentieth Century. And the transformation from British colony to sovereign state was completed early in that recent century.

Although this fortunate situation might have suggested a policy of isolationism, as it did at certain periods in the United States, Canada has been a strong proponent of multilateral organizations, treaties, and other mechanisms whose purposes are to support regional, and global security.

Under the sponsorship of the UN (now with 189 member states), and also latterly of NATO (now with 19), Canada has been an active partner in a host of multilateral peace operations in many parts of the world. Participation in such operations is voluntary, and there is no threat to Canadian independence or sovereignty if Canada chooses not to contribute to any particular initiative undertaken by the UN or NATO.

The Past and Present Roles of NORAD

NORAD is a bilateral institution, between two very unequal partners, with the USA having nearly nine times the population, over ten times the GNP, and with defence expenditure about forty times that of Canada.

Notwithstanding these substantial inequalities, the NORAD arrangement has been a very satisfactory one, mutually beneficial to both partners. However, circumstances have changed from those existing in the early Cold War.

The first prime role of NORAD was to give reliable warning of attack on North America by Soviet nuclear-armed long-range bombers. It was necessary to emplace chains of radars (the Distant Early Warning or "DEW" Line and the Mid-Canada Line) across Northern Canada. Warning would allow the bombers of the US Strategic Air Command to escape destruction by taking off before their home airfields were attacked. If the strategy of mutual deterrence was to be executed and they were ordered to make the long flight to the USSR to deliver retaliatory strikes, the US bombers could be refueled over Canada, either by landing at bases in Canada or, later on, by air-to-air refueling by US aircraft

based in Canada. The refueling facilities in Canada were manned by USAF personnel.

The primary means of active defence of targets in Canada and the United States against the bombers was provided by all-weather interceptor aircraft, controlled by large ground-based radar stations. The radars and airfields were located across Southern Canada and the periphery of the central 48 states. Most of the air bases and radar stations in Canada were manned by the RCAF. Surface-to-Air rocket-propelled anti-aircraft missiles were also deployed in the United States, followed later by BOMARC cruise missiles based on a line following the US-Canadian border, including two bases in Canada. American nuclear warheads were installed in air-to-air and surface-to-air missiles of both countries.

Before the deployment of this extensive air defence system had been completed, a new threat to North America was presented by Soviet Intercontinental Ballistic Missiles. An ICBM moves more than twenty times as fast as a subsonic bomber, so that it would be near the US/Canada border about 6 minutes after crossing over the DEW Line, as contrasted to over two hours for a bomber.

To maximize the brief warning of attack by ICBMs the US deployed the Ballistic Missile Early Warning System, consisting of huge fixed radars located in Alaska, Northern Greenland, and England. Canadian territory was not required.

Since at that time there was no capability to intercept an ICBM once it was launched, defence was obliged to depend on the ability to retaliate. The short warning time would not allow very many SAC bombers to be flushed, but the American ICBMs were set on a "hair trigger" alert so that a significant proportion could be launched before they could be destroyed, and this formidable deterrent was redoubled by the increasing number of US Navy ballistic missile submarines, of which about half were kept on patrol, submerged at sea, and not vulnerable to attack by ICBMs.

With the dissolution of the Soviet Union, the end of the Cold War, and the vastly improved relations between the United States and Russia, the threat of attack by a large force of bombers or ICBMs is no longer a pressing concern. The Mid-Canada Line has been terminated, the DEW Line converted to the "North Warning System" (which performs a similar role for detection of aircraft, but with new radar), most of the aircraft control radars closed down, and fewer interceptors are allocated to the air defence role.

Ballistic Missile Defence

Today the US foresees a threat from small numbers of ICBMs in the hands of "states of concern", such as North Korea, Iran, and Iraq, who would probably be able to arm their missiles, with nuclear, biological, or chemical payloads. Another concern is the possibility of the accidental or unauthorized launching of Russian ICBMs.

The US is planning a multilayered system for interception of a limited number of ICBMs. One layer, using weapons which could be shipborne, airborne, or ground based, would be stationed close enough to the launching points to be able to intercept the missiles while still in or soon after their boost phase. A second layer, consisting of very large interceptor rockets based on the ground in Alaska or the central USA, would complete its interceptions while the missiles were in mid-course. A terminal layer would use interceptor rockets based on ships off the US coasts or on the ground inside US territory. All three layers would require warning, tracking, and fire control information produced by sensors in various locations, including space. At the present time it is not evident that any of these equipments would need to be stationed in Canada.

Homeland Defence

With the end of the Cold War, threats to the security of North America which had been overshadowed by those of ballistic missiles and bombers began to draw increasing concern in the United States. The list included illegal importation of immigrants and contraband drugs ~~and immigrants~~, disruption of computerized telecommunications, and also violent assaults on US properties abroad. Then 11 September 2001 brought the unprecedented suicidal attacks on large buildings in New York and Washington, using passenger aircraft hijacked by representatives of a fiercely dedicated terrorist organization, based in widely distributed cells rather than being sponsored by the government of a recognized country. Clearly the United States is a prime target for further attacks, which could take many forms. Canada may be a target itself, and also may offer undercover bases for preparations and attack against the US.

In order to better address this new threat of terrorism the United States is planning to make substantial changes to its defence and many other government organizations. A new US Northern Command is being formed. Consideration is being given to combination of US Strategic Command with US Space Command, giving

it the responsibility for missile defence, protection of space resources, and cyber operations.

But what will happen to NORAD?

NORAD is the logical agency to continue to provide defence against bombers and ballistic missiles. While these may not their most likely weapons, terrorists may use non-military aircraft for illegal entry into Canada or the US, or for airborne attacks launched from inside North America against buildings, crowds, power stations, dams, or crops. The systems operating today for air traffic control depend on the cooperation of the aircraft in filing flight plans and carrying beacons which signal their position and identification. The "secondary" radars operated by the civilian transport agencies cannot detect aircraft not using beacons. Moreover, the radar cover (whether primary or secondary) has been sited for the surveillance of air traffic entering North America, rather than for flights originating within the continent. The type of air surveillance needed to detect and counter the use of aircraft for the purposes of terrorism will require expansion of the system currently operated by the military and civilian organizations.

Progress in the development of airborne and spaceborne sensors is making it possible to enable a large aircraft to survey activities on the ground, the ice, and the sea as well as the air, over a very large area, and to communicate the information it gains immediately, and over long distances. For the purpose of detecting unauthorized activities on the approaches to the United States, whether by sea, by air, or by establishment of bases on the polar ice or the uninhabited North of Canada, such surveillance would be invaluable for the homeland defence of the United States as well as for Canada.

If Canada declined to undertake these improvements in surveillance of activities in and over Canadian territory, the US could be strongly motivated to come and do it itself.

But then what about Canadian sovereignty?

If Canada did undertake to use the latest technologies for airborne surveillance of its own territory, including the sparsely inhabited North, the Arctic ice, and the ocean approaches (including fishing and prospecting zones), this would be a key factor in confirming our sovereignty over regions where it could be disputed concerning matters such as fishing, prospecting, mining, and transportation. It could also provide inestimable benefits for the development of the Canadian North.

If such a commitment were made to the United States, the natural agency for command and control of this surveillance system for homeland defence would be NORAD. Canada would continue to receive the huge volume of information regarding crucial activities related to security, and would continue to be a respected partner in the defence of North America.

In the 1950's, the part of the new NORAD system that was located in Canada contributed a great deal to the defence of the United States (and Canada), but not very much to Canadian activities other than defence. But, facing the challenges of terrorism in the early years of the present century, Canada has the opportunity to make another important contribution to the defence of North America in a way that is also likely to be of inestimable value to the development of our northern regions and quite possibly for the maintenance of Canadian sovereignty against possible future challenges.

Canada would have to provide substantial funding for such an activity.

But sovereignty has its price.

George Lindsey
2 July 2002