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Canadian Arctic Sovereignty and Security: Historical Perspectives

Edited by P. Whitney Lackenbauer



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Cover: The Mobile Striking Force, an air-portable and airborne brigade group designed as a quick reaction force for northern operations, was an inexpensive solution to the question of how Canada could deal with an enemy lodgement in the Arctic. During training exercises, army personnel from southern Canada learned how to survive and operate in the north. In this image, taken during Exercise Bulldog II in 1954, Inuk Ranger TooToo from Churchill, Manitoba relays information to army personnel in a Penguin. DND photo PC-7066.

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Calgary Papers *in Military and Strategic Studies*

Canadian Arctic Sovereignty and Security Historical Perspectives

Edited by P. Whitney Lackenbauer

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A Practicable Project: Canada, the United States, and the Construction of the DEW Line

Alexander W.G. Herd

“We are talking just as if we could move up in Canada and do what we damn please without the Canadians and anything else, and not getting them into it.”

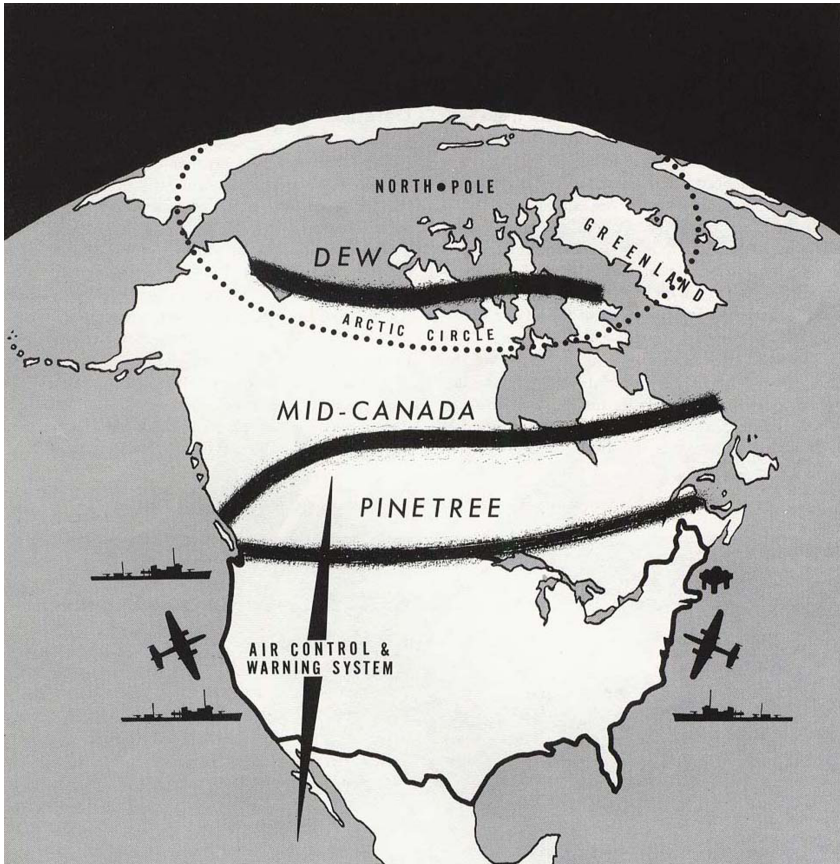
— US Secretary of Defense Charles Wilson, 1953¹

Charles Wilson’s comment counters conventional Canadian perceptions: here, during the early Cold War, a high-ranking American official expresses concern for the American intrusion into Canadian affairs. Wilson was in the minority within the American government of the day, a time in which both Canadian and American political and military leaders made critical decisions on their countries’ respective national security and jointly on the overall defence of the North American continent. One joint decision involved the construction of the Distant Early Warning (DEW) Line, a line of radar stations to detect a Soviet aerial attack, across the Arctic. This decision was fraught with challenges and embodied aspects of Canada-United States continental defence relations also witnessed in later events.² From the Canadian perspective, during the Cold War these relations were characterized by American pressure to coordinate Canadian defence policies with United States defence policy, Canadian concern for territorial sovereignty – particularly in the Canadian Arctic, tense competition between American and Canadian business interests, Canadian and American public opinion on the extent of defence cooperation between the two countries, and the Canadian struggle for equal partnership with the United States in continental defence projects.

An understanding of Canada-United States defence cooperation requires recognition of American and Canadian popular views of each other.³ Canadians typically pay more attention to the United States than vice versa, being sensitive to American public opinion of their country and influenced in their thought by major American social, economic, military, and political events. Conversely, Americans are generally limited in their interest in

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Canada, take Canada for granted, and commonly assume that Canadians take the same attitude on domestic and foreign issues.⁴ American and Canadian views of the Soviet Union during the Cold War illustrate the differences of opinion between the two countries. Though both countries' citizens viewed the Soviets as a threat to Western democracy, mistrust of the Soviets was more deeply embedded in the American psyche.⁵ Canadians adopted a reserved and pragmatic approach to the Cold War, displaying "very little of the doctrinaire self-righteousness inherent in the American approach."⁶ As a result of this situation, the Canadian government's decision to participate with the United States in continental defence projects was due to the government's perception that the United States directly threatened Canadian sovereignty more than the Soviet Union.⁷



Map 7. Federal Electric Company, 1960.

The air defence system was the key component to North American continental defence during the Cold War. The years 1953 and 1954 represent the crucial period in Canada-United States continental air defence cooperation. These years were preceded by a decade of moves on both sides of the border that brought Canadian and American defence policies closer together in a common effort to defend North America from the threat of Soviet nuclear attack. Canada-United States continental defence cooperation in the modern era began with the Ogdensburg Agreement between Canadian Prime Minister William Lyon Mackenzie King and US President Franklin D. Roosevelt in August 1940. This agreement committed the two countries to "consider jointly the defence of North America as a single problem."⁸ The Permanent Joint Board on Defence (PJBD) was created at this time to fulfill this role. The Joint Board was composed of two national sections, each consisting of a civilian chairman, two representatives from the State Department/Department of External Affairs, and three or four military representatives.⁹

Continental defence cooperation increased proportionately in the post-war era. During the winter following the end of the Second World War, the two countries undertook a joint defence exercise in the Arctic.¹⁰ In February 1946 the Military Cooperation Committee (MCC) was created, consisting of the American and Canadian military members of the PJBD. Whereas the PJBD was an advisory body, the MCC formulated joint defence plans for the Joint Board's approval.¹¹ The MCC drafted the Joint Canadian-United States Basic Security Plan in June 1946. The Plan's Joint Task No.1 was the protection of vital areas in Canada and the United States from air attack.¹² In the winter of 1947 jointly constructed weather stations were established in northern Canada¹³ and in February 1947 the two governments made a joint public announcement on their decision to continue continental defence collaboration in peacetime, without any formal treaty or contractual obligation.¹⁴

With the increased urgency of continental air defence, a close relationship developed between the Royal Canadian Air Force (RCAF) and the United States Air Force (USAF) during the late 1940s. At the 1948 May Day Parade, the Soviets displayed new long-range bomber aircraft and in August 1949 the Soviets conducted their first atomic detonation. Shortly afterwards, American defence analysts predicted that the Soviet Union would have 150 atomic bombs for delivery in a devastating attack on the United States by 1954.¹⁵ At this time another joint organization was formed and served as a vehicle for continental defence development: the Canada-United States Regional Planning Group (CUSRPG), one of five North Atlantic Treaty Organization (NATO) regional defence groups. Within the framework of

this group, the United States' Joint Chiefs of Staff (JCS) realized that the principal military requirement for the Canada-United States region was defence against Soviet atomic attack.¹⁶ The USAF began construction of the "Permanent" early warning radar network across the United States at the end of the decade, submitting requests for its extension into Canada at the beginning of the 1950s. In the early years of this decade, the two air forces made numerous plans for tactical cooperation in air defence training, interception of enemy aircraft over North American territory, and other complicated air defence arrangements.¹⁷

Meanwhile, the first Canadian studies of early warning were conducted in the Arctic in 1946. This project had been discarded, however, due to its high costs and impracticality.¹⁸ By 1951 the United States government had initiated more extensive continental air defence studies, including plans for Arctic early warning systems. That year at the Massachusetts Institute of Technology (MIT), scientists conducted a study, Project Charles, on the technical problems of air defence.¹⁹ Project Charles resulted in the formation of the MIT Lincoln Laboratory, which designed computerized early warning data-handling equipment, known as Semi-Automatic Ground Environment (SAGE). In 1952 the United States Department of Defense collaborated with the National Security Resources Board and the Federal Civil Defense Administration on a study called Project East River. This project's report recommended an early warning network in the Canadian Arctic at the head of a defence-in-depth system (anti-aircraft units and interceptor fighter planes in Canada stationed behind the Arctic line). That same year the Lincoln Laboratory conducted its own Summer Study Group (SSG) report. This report recommended two distant early warning lines across the Canadian Arctic, one at the 70th parallel, another at the 75th parallel.²⁰ The Summer Study Group involved two Canadians, one from McGill University in Montreal, the other from the Defence Research Board (DRB). As a result of these individuals' work at MIT, the DRB began developing cost-saving, unmanned radar equipment. The "McGill Fence" was initially proposed to form a back-up warning line along the 54th parallel to the SSG's two "DEW lines."²¹

By the end of 1952, US President Harry S. Truman's National Security Council (NSC) had formulated plans it believed were necessary for the defence of the continent against Soviet aerial attack. On 31 December, in one of his last acts as president, Truman approved NSC-139. This plan called for the establishment, by 31 December 1955, of an air defence system (particularly in the Arctic) to provide three to six hours early warning of Soviet aerial

attack. The implementation of these plans, however, was left to Dwight D. Eisenhower's administration, which first took office in 1953.²²

This chapter discusses one of the most important developments in Canada-United States defence relations during the Cold War. A careful assessment of the primary evidence reveals that the Canadian government did not passively subordinate its continental defence policy to the United States in the joint arrangements of 1954 for the construction of the DEW Line. Canadian political and military officials withstood American pressure and shaped this continental air defence project to protect their interests. Canadian-American collaboration on the DEW Line was part of the two countries' cooperation on the other two early warning lines, the Pinetree network in southern Canada and Newfoundland and the Mid-Canada Line along the 55th parallel. Scholars have largely focused on the significance of the North American Aerospace Defense Command (NORAD) to joint North American Cold War defence, to the neglect of the cooperation on the early warning lines.²³ However, these collaborative efforts during the first two years of the Eisenhower administration and Prime Minister Louis St. Laurent's second administration in Ottawa produced the most important results in continental air defence: the early warning lines were conceptually established (if not materially), the level of Canada-United States cooperation significantly increased and moved both countries toward a unified air defence command, and, in a twist of historical irony, both nations' governments realized that the pending intercontinental ballistic missile threat would render the early warning programmes obsolete by 1960. The particular case of the Canada-United States decision in 1954 on the construction of the DEW Line illustrates Canada's struggle for control in continental air defence projects and provides a microcosm of Canada-United States defence relations.

In June 1954 the Joint Canada-United States Military Study Group (MSG) – composed of air force planners and created in 1953 to determine the operational requirements for a chain of Arctic radar stations – recommended the establishment of the Distant Early Warning Line. The MSG reported this line was necessary to keep “abreast of anticipated improvements in Soviet capabilities” and allow the timely employment of US Strategic Air Command forces and other military and civil defence measures.²⁴ The MSG recommended that the Canadian and American governments “agree in principle” on the establishment of this line across the “most northerly practicable part of North America.”²⁵ While the United States government's approval of this report was prompt, the Canadians hesitated. At a July meeting of the PJBD, the American chairman declared that the DEW project was “receiving great

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emphasis within the U.S. Government" and the president, the NSC, and the American Joint Chiefs of Staff had approved its construction.²⁶ The American section of the board pressed the Canadians for an "agreement in principle between the two Governments on the need for such a line."²⁷

The United States government's enthusiastic response to the MSG report caused consternation among Canadian officials. These officials feared a quick decision by their government would result in complete American control of the DEW Line, limiting Canada's "freedom of action" in this project and threatening the country's sovereignty. R. A. MacKay, an official with long experience in Canada's Department of External Affairs,²⁸ saw only two alternatives: let Canada build the Mid-Canada Line and the United States build the DEW Line, or "evolve" another joint enterprise to build both lines.²⁹ MacKay pushed for the latter alternative and stressed the importance of full Canadian participation in the DEW Line's construction.

A major sticking point in discussions of the Distant Early Warning Line was, like the other lines, the choice of equipment. In July, US Admiral Arthur Radford, Chairman of the Joint Chiefs of Staff, argued that Canadian concerns with the proposed American equipment inhibited the two countries from reaching a full agreement on the procedure for establishing the DEW Line. Radford claimed that the Canadians were "fearful" that the Soviets would deliberately and constantly trigger off ("spoof") American radar equipment.³⁰ Eisenhower confirmed with his staff, however, that one of the Mid-Canada Line's purposes was to determine whether the DEW Line was being "spoofed" or an actual enemy aircraft was inbound. Secretary of Defense Wilson knew Canadian officials were sensitive about the extent of their participation in the DEW Line, particularly from a financial standpoint. A Canadian contribution of "a few million dollars" was the equivalent of US "two or three billion dollars."³¹

Eisenhower and his officials also discussed with Robert C. Sprague the technical and economic advantages of American equipment for the Distant Early Warning Line. Sprague was chairman of the board of the Sprague Electric Company of North Adams, Massachusetts and an authority on electronic devices. In 1953, Sprague had been appointed to a subcommittee of the US Senate Armed Services Committee to participate in a full study of continental defence. He provided the senators on the subcommittee with his expert analysis of the various proposals for the protection of the United States by various types of radar fences.³² At the end of this study, Sprague submitted a detailed report on continental defence to the Senate committee in March 1954.³³ In late July 1954, as a consultant to the NSC, Sprague stated that the

MSG had proven, through experiments, that the American-made Western Electric manned radar stations were “workable” for operation of the DEW Line and also claimed that the Canadian-made McGill unmanned detection stations were more easily “spoofed” than Western Electric’s equipment.³⁴ As a result of these discussions, Eisenhower pressed Wilson to persuade his Canadian counterparts of the importance of the early warning lines’ operational readiness, “with a view to getting a decision as soon as possible.”³⁵

In Canada, the concern over the DEW Line’s equipment choice was an element of officials’ overall concern with the nature and extent of Canada’s participation in the construction of the Arctic line. The Canadian government had assumed overall responsibility for the Mid-Canada Line in June, the same month that the MSG recommended the establishment of the DEW Line. Despite MacKay’s suggestion for a joint effort for both lines, the Canadian government’s defence policymaking body, the Cabinet Defence Committee (CDC), decided to maintain the Mid-Canada Line as a Canadian-built project, to ensure the government’s authority in decision-making and control of costs and to avoid subordinating Canadian plans to those of its American neighbour. Additionally, Canadian construction of the Mid-Canada Line had demonstrated to American officials and to the Canadian public that Canada was doing its share to protect the continent. However, the Mid-Canada Line commitment limited Canada’s ability to contribute to the DEW Line. American pressure to construct the DEW Line according to American designs made the domestic “political consequences [for Canada]... most undesirable.”³⁶ The CDC, to avoid this situation and protect Canadian sovereignty, recommended that the government maintain its responsibility for sole construction of the Mid-Canada Line, reach an agreement with the United States government on the division of costs of the DEW Line, and undertake this line as a joint Canada-United States project.³⁷

On 29 July 1954, Ralph Campney, Canada’s Minister of National Defence (MND), suggested in Cabinet that “approval in principle be given” for the establishment of the DEW Line.³⁸ On 18 August the Canadian administration agreed on the need for this line. Cabinet officials left considerable leeway in their commitment, however, requesting that the United States accept this agreement “without prejudice” to the extent of Canadian participation, which was subject to further preliminary studies on the costs involved in the DEW Line.³⁹ Prime Minister St. Laurent hoped this decision quelled earlier “suggestions in U.S. quarters” that Canada was not proceeding as rapidly as capable on continental defence development.⁴⁰

From August 1954 to year’s end, Canadian officials grappled with the overall Canadian contribution to early warning and how to balance

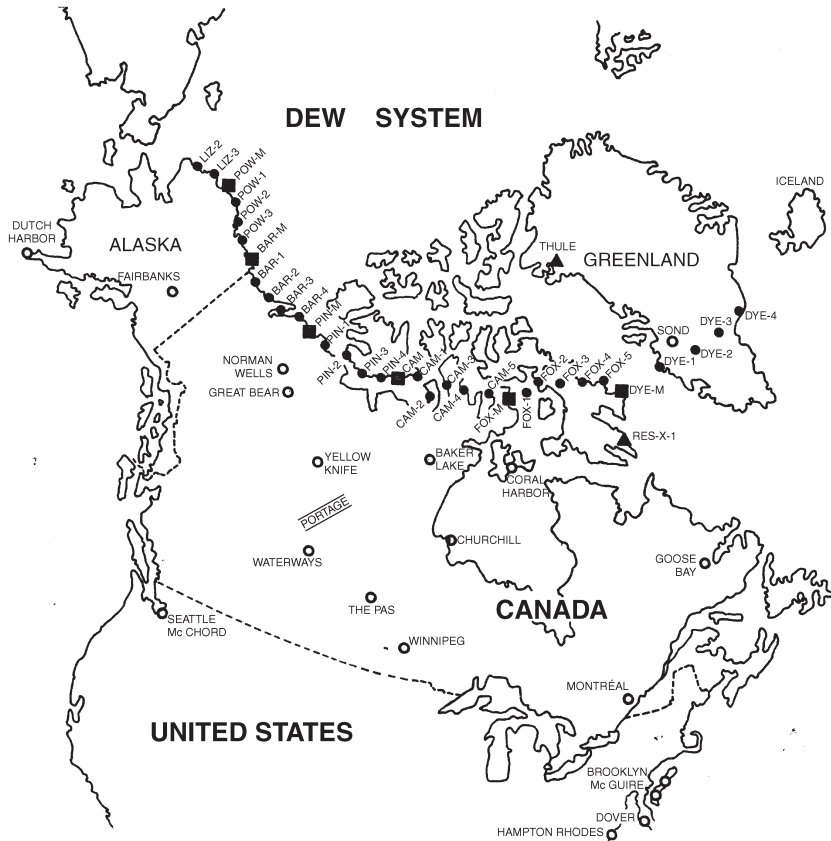
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American control of projects. General Charles Foulkes, Canada's Chairman, Chiefs of Staff Committee (CCOS), was critical of the government's plans for the Mid-Canada and DEW Lines. As CCOS, Foulkes was at the top of Canada's military hierarchy and served as the MND's principal military advisor. A politically astute military chief, he supported closer Canada-United States military relations and therefore had a direct interest in joint continental defence projects. Foulkes disapproved of an External Affairs draft submission to the CDC that authorized the United States to proceed with preliminary work on the DEW Line before the MSG had completed further studies on the location of this line and its organization and equipment. These studies would determine cost and manpower estimates, enabling the government to assess its potential participation in the project. The CCOS did not believe that the Pinetree network, the Mid-Canada Line, and the DEW Line could form an effective early warning system. Nor did Foulkes believe that an integrated early warning system would be economically beneficial to Canada. He questioned the value of the Mid-Canada Line in such a system, since the DEW Line was designed to both identify and detect aircraft, the latter the Mid-Canada Line's main purpose. For Foulkes, American construction of the DEW Line gave the impression to the American and Canadian publics that the Americans were responsible for and controlled the Canadian Arctic. He also accused the US Western Electric Company as "in this business for profit."⁴¹ According to the general, his American counterpart, Admiral Radford, had similar views of the DEW and Mid-Canada Line projects.⁴²

Further studies by the two air forces convinced Foulkes and the Chiefs of Staff (who, as a group, shared the chairman's scepticism) that a comprehensive early warning system at the earliest possible date was "vital."⁴³ The two air forces established the RCAF-USAF Military Characteristics Committee, DEW Group. This group's purpose was to develop "mutually acceptable" military characteristics and operational requirements for the DEW Line.⁴⁴ The group's studies provided the basis for the selection of equipment, manpower and cost estimates, and "other related actions essential to early installation of the land based segment of the DEW line."⁴⁵ The Military Characteristics Committee subsequently concluded that the Mid-Canada Line and the air control and warning system (the Pinetree network) were insufficient for the required state of preparedness for Canadian and American air defence forces.⁴⁶

The above group's report, in addition to the MSG's Fourth Interim Report, helped the Chiefs of Staff view the establishment of the DEW Line by

1957 as “a requirement of great military importance.” Both countries believed that an effective continental defence first protected the North American bases possessing retaliatory capability and then protected major industrial and population centres. In the chiefs’ estimate, the DEW Line would provide the two hours warning required by the Strategic Air Command and “other users.” The change in the chiefs’ attitude towards the early warning lines as a whole was expressed in their belief that a completed DEW Line augmented the Pinetree and Mid-Canada radar stations.⁴⁷ With the top military leaders’ support, Canada’s Secretary of State for External Affairs, Lester B. Pearson, and Campney affirmed the CDC’s earlier recommendation that the Canadian government agree with the United States on the construction of the DEW Line as a joint project, the extent of Canadian participation in this construction to be determined in the future.⁴⁸



Map 8. From Matthew Farish, “Frontier Engineering: From the Globe to the Body in the Cold War Arctic,” *The Canadian Geographer* 50/2 (2006)

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To balance Canadian participation in the DEW project with American leadership of the programme, the CDC also worked to consolidate the early warning programmes. At an October meeting of the PJBD, the American section had informed the Canadians that the United States government, as a result of a report by the Western Electric Company, considered the construction of the DEW Line as feasible. The Western Electric report stated that if work began in 1955, then the line would be operable by 1957. This report based its data on the potential DEW Line consisting of a combination of scanning radars and modified McGill Fence equipment, running from Cape Lisburne in northwestern Alaska to Davis Strait (between Baffin Island and Greenland). The estimated cost of the line was approximately \$200 million, with a total manpower requirement of 700 – 1000 personnel.⁴⁹ The chair of the American section, PJBD stressed the importance of the two governments reaching an early agreement on the construction of the line, in order for the DEW Line to be operational by 1957. The American officers declared that the American government was prepared to accept full responsibility for this line, granting Western Electric the construction contract.⁵⁰

At a meeting on 12 November, the CDC considered the Western Electric study and the American requests for construction of the DEW Line. The challenge still remained whether Canadian military personnel were able to participate in the DEW project because of Canadian responsibility for the Mid-Canada Line. The Chiefs of Staff had agreed that the Arctic line should be built between Cape Lisburne and Davis Strait, but they found it “undesirable” for the RCAF to participate in the line’s construction, as the air force’s technical resources were heavily committed to the Mid-Canada Line. Due to the urgency of the project, the chiefs recommended that, if the Canadian government decided to participate in construction, then it should authorize the United States government to take “necessary” preliminary measures, including the stockpiling of supplies and transportation arrangements. Conversely, if the Canadian government decided not to participate in the DEW Line’s construction, the chiefs recommended that the United States be authorized to proceed immediately, but under “certain terms and conditions.”⁵¹

The Cabinet Defence Committee came to the conclusion that the American proposals, as presented to the Canadian section of the PJBD, amounted to a “crash programme.” Canadian officials were sceptical about the construction cost and manpower estimates. There were more problems inherent in establishing the DEW Line than US officials realized. To solve the Canadian government’s dilemma over control of the DEW project, the CDC decided that the early warning lines, though distinct in location and

purpose, "should be regarded as one whole project." This meant that each country would have responsibility (but not exclusive control) for a segment of the system. For "administrative reasons," the United States would be responsible for the construction of the system's "far northern element." This did not, however, mean complete American control of construction. The establishment of exclusively United States installations on the northern border of Canada was "undesirable from the point of view of the general national interest." Canadian entities would provide transportation facilities and some of the equipment during the construction phase of the line.⁵²

This scenario slightly altered the previous arrangements for the joint air defence projects. The three early warning lines were now considered elements constituting "an over-all continental defence warning system, the establishment of which is being undertaken as a joint Canada – United States project."⁵³ Canadian policy, both publicly and privately, aimed to preserve Canadian rights in control and in participation of the overall system. The Cabinet Defence Committee recommended that both governments issue a public announcement, explaining the overall early warning system to both countries' citizens and the responsibilities of each government in its establishment. This statement, Canadian officials hoped, would also clarify that any construction and operation of the northern line was subject to the same general principles of other joint defence projects in Canada, in particular the Pinetree network.⁵⁴

Thereafter, in November 1954 the responsibility of DEW Line negotiations moved from the PJBD to Canadian-American high-level foreign relations officials, with discussions now run through diplomatic channels.⁵⁵ On 16 November, the Canadian ambassador to the United States, A.D.P. Heeney, informed US Secretary of State John Foster Dulles of the Canadian government's plans for an overall joint warning system. As a matter of formality, the ambassador reviewed the components of the system. The Canadian government agreed that its responsibility was the Mid-Canada Line, north of the "settled areas of Canada." Heeney's government also agreed that the United States' responsibilities were the DEW system, across the "most northerly practicable part of North America," and the seaward extensions of the system, covering the seaward approaches. Heeney also informed Dulles that American authorities could proceed with preliminary measures for the DEW Line, including the procurement, shipment, and placement of construction materials.⁵⁶

Canadian policymakers realized that they were financially and materially unable to fully construct the DEW Line; in the face of inevitable American construction of this line, the Canadian government wanted as-

surances that any American plan was carried out with Canadian consent. Therefore, Heeny informed Dulles, the United States' role in the DEW project was subject to particular Canadian government guidelines.⁵⁷ These terms and conditions for American participation in the DEW Line were formulated and submitted to the United States government in mid-November. Many of the conditions were similar to statements made with respect to the construction of the Pinetree radar stations in early 1953.⁵⁸ The list of conditions read like a litany of Canadian sovereignty sensitivities and desire for control. All DEW plans were dependent on mutual consultation. A DEW Project Office, established by American officials and the management contractor appointed by the United States, would be the "instrument for effective consultation between the Canadian and United States agencies concerned."⁵⁹ The location of station sites, airstrips, roads, buildings, and construction plans were subject to Canadian inspection and discussion with the appropriate Canadian authorities, "if requested."⁶⁰

The United States was also required, "to the fullest extent practicable," to give Canadian construction contractors, commercial air carriers, and shipping equal opportunity for participation in the construction phase of the DEW project.⁶¹ Preference for Canadian labour in this phase was also required. Canadian law applied to all aspects of the project, including immigration and customs regulations, taxes, and ownership of "removable property."⁶² Under Canadian law, special attention was given to the protection of wildlife and "objects of archaeological interest or historic significance" in the Northwest Territories and Yukon Territory. American personnel were also asked to respect the Inuit communities living in close proximity to the project. They were also required to provide relevant scientific data (such as geological, topographical, hydrographical, and geophysical information) to Canadian officials.

Moreover, the Canadian government would allow the stationing of US military and civilian government personnel at the DEW Line stations, but only after consultation between the two governments. The United States was authorized to initially operate and man the DEW Line, but the Canadian government reserved the right at any time to take over the operation and manning "of any or all of the installations." The two governments agreed to maintain the DEW system in operation for ten years; the duration of operation would change only "in the light of their mutual defence interests." After this period of time, the PJBD was to address any questions on the continuing need of the DEW system. Following the Joint Board's consideration, either government could decide to close installations along the line.⁶³

The Canadian government's conditions were similar to previous stipulations on continental air defence projects, particularly on the provision of electronic equipment for the DEW Line. The Canadian government reaffirmed "the principle that electronic equipment at installations on Canadian territory should, as far as practicable, be manufactured in Canada." The "practicability" of using Canadian electronic equipment was a matter of consultation, through the DEW Project Office, between Canadian and American agencies.⁶⁴ This condition promptly became a matter of dispute, with arguments familiar to the debate surrounding equipment for the Pinetree Line. American air defence planners had long-favoured their own equipment for the early warning lines; they summarily requested a revision to the above condition that "equalized" the chances of American-made equipment being used on the DEW Line.⁶⁵

In response, Lester Pearson instructed the Canadian embassy in Washington to relay his views on the proposed American revision to the State Department. Pearson stated that neither the strategic importance of industrial production nor the need to develop alternate sources of supply in Canada could be neglected in defence planning. He believed that the Canadian electronics industry must be given the opportunity to participate in the actual production of equipment (especially in the field of radar) to "play an effective part in the joint defence of the North American continent." The external affairs minister also argued that it was only through the experience of manufacturing this type of equipment that Canadian industry could "be kept in readiness to meet wartime demands."⁶⁶

Pearson reiterated the principle that electronic equipment for radar systems on Canadian territory should be made in Canada "as far as practicable." The basis of Canada-United States consultation on this matter, Pearson opined, was the mutual recognition that "practicability" must include strategic, commercial, and economic considerations. From Pearson's standpoint, the proposed American revision was the "antithesis" of this concept of "practicability" and if applied, the Canadian electronics industry would find itself in an "impossible position" to meet the proposed American requirements. Pearson rebutted the American claim that the American proposal granted equal opportunity to both the United States and Canadian electronics industries and postulated that the opposite would occur. The American proposal would load the conditions for equipment procurement "heavily in favour" of its industry and make the Canadian government's position in dealing with its own industry "untenable."⁶⁷

Having made clear his views on the American proposal, the Secretary of State for External Affairs assured his American counterparts that the

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Canadian government had no intentions to impose unreasonable conditions or demands on them. Pearson commented that “[i]n our view it is not too much to ask” the United States government to defer, on account of previous cooperative ventures, to Canadian judgment on the importance of “practicability.” Pearson would not support the provision of Canadian-made equipment for the DEW Line if that equipment would adversely affect the project. Pearson knew, despite these assurances, that the issue of the DEW Line’s electronic equipment would not be immediately resolved. He noted to the embassy in Washington that this matter was “one likely to present a difficulty in the early conclusion of an agreement on the DEW Line.”⁶⁸

Another slight problem occurred with respect to the joint announcement on Canada-United States continental air defence. This announcement was issued simultaneously in Ottawa and Washington at noon EST on 19 November 1954 and made public the governments’ decision to “proceed with the construction of the Distant Early Warning Line” and that the United States government was responsible for the construction and installation of this line.⁶⁹ The Pentagon, however, delivered the text of this announcement to reporters 18 hours before the scheduled release by both governments to their respective presses. Consequently, as Pearson told Heeney, “You should draw to the attention of the State Department the difficulty which this has caused us.”⁷⁰

The problem was that the Canadian cabinet had wanted to include in both governments’ press releases its earlier statement that the same general conditions and principles that governed other joint defence projects in Canada also applied to this latest project. The Pentagon’s early issue of the draft public announcement precluded this addition to the United States government’s press release. The Canadian government’s press officer nevertheless released this information to the Canadian press. The press officer summarized the government’s conditions on the reservation of Canadian title to all land required for the DEW system, the application of Canadian law, the Canadian right to take over the operation and manning of any of the American installations, and the equal consideration to Canadian and American contractors for construction and procurement of materials. Additionally, the Canadian press was informed that American agencies were to give preference to Canadian labour, respect Inuit interests, and were accountable to the “underlying principle” that all cooperative arrangements were not to impair either country’s control over activities in their own territory.⁷¹

As a result, the Canadian and American publics received different reports on a vital joint defence project between their two countries, leading

to a disparity between the respective publics' perceptions of continental air defence. The Pentagon's early release of its information undercut the Canadian government's attempts to ensure that citizens from both countries understood the role of Canadian sovereignty in continental air defence. The American public therefore did not understand the extent to which their DEW Line agencies were subject to Canadian conditions. This situation had the potential to cause further problems down the road; if the American public perceived that the Canadian government was delaying the urgent task of establishing defence against the Soviet threat, the United States government would feel public pressure to bring the Canadians in line with stated American objectives. Then the Canadian government would face more American obstinacy in defence cooperation. The lesson learned, Pearson noted, was that both governments had to specify both the release time of a joint announcement and the time of delivery to the press.⁷²

Obviously, the establishment of the DEW Line in the Canadian Arctic was not a straightforward task. This fact was not only true in Canada – United States cooperation, but also among the numerous departments of Canada's government with a hand in the DEW project. On 22 November 1954, External Affairs circulated a review of the cabinet conclusions on DEW Line arrangements and copies of the draft conditions for American participation. These documents were sent to the deputy ministers of Northern Affairs and National Resources, Transport, National Revenue (Customs and Excise Division), National Revenue (Income Tax Division), Citizenship and Immigration, and Labour, and to the Commissioner of the Royal Canadian Mounted Police.⁷³

Some of the department heads approved of the conditions. The deputy minister of Northern Affairs suggested, in order to enforce sovereignty, that the Canadian flag should be flown at all major DEW system installations and anywhere the United States flag was displayed outdoors.⁷⁴ Others responded with queries demonstrative of the Canadian concern for controlling American participation. David Sim, the deputy minister of National Revenue (Customs and Excise), was concerned with the exemptions granted for the disposal of American material on Canadian territory under "Ownership of Removable Property."⁷⁵ Sims noted that his department was one whose concurrence was required before the disposal of any duty- and tax-free goods occurred. He referred to his department's previous experience with the Pinetree network, stating that there were "substantial problems" with the United States on similar matters related to this project and that these problems may bear on the granting of future exemptions.⁷⁶

As a result of Sim's comments, External Affairs planned to add a provision to the conditions on removable property. An exchange of notes between the governments on 11 and 18 April 1951 concerning the disposal of excess American property in Canada would apply to the DEW project. External Affairs requested Sim's opinion, based on his experience with Pinetree, on the necessary procedures in this matter for the Distant Early Warning Line.⁷⁷ Sim found it difficult to formulate specific procedures at this point in time for the DEW project and first needed answers to several pertinent questions. He requested from External Affairs information on the extent of the US Corps of Engineers' role in construction work, whether or not there would be a main contractor or subcontractors, and whether American or Canadian equipment was to be used. Similarly, the deputy minister requested information on what portion of and types of supplies would be bought in Canada directly or through Canadian Crown Agencies.⁷⁸ With Sim's queries, External Affairs officials were now concerned that the appropriate American officials understood the deputy minister's standpoint and contacted their defence counterparts on this matter. External Affairs' Benjamin Rogers wrote to the deputy minister of National Defence that "I am not at all sure that the United States authorities concerned with the project appreciate the need for giving early attention to these problems." He recommended that representatives from the Western Electric Company and the USAF come to Ottawa to clarify this issue with National Revenue officials.⁷⁹

Other federal ministries also expressed pertinent concerns about American participation. J. R. Baldwin, the deputy minister of Transport, informed Under Secretary of State for External Affairs Jules Léger that Canadian telecommunications carriers should have, "to the fullest extent practicable," the opportunity to handle telecommunication circuits and traffic during both the construction phase and the period of the DEW Line's operation. Baldwin pushed for preference for Canadian shipping; he also wanted a Canadian observer placed on board any ship used in the sealift of equipment.⁸⁰ External Affairs official Max H. Wershof noted to Baldwin that his recommendations regarding the use of Canadian telecommunications "may have important operational implications" requiring consideration by the Department of National Defence (DND).⁸¹

Wershof forwarded Baldwin's recommendations to Deputy Minister of National Defence C. M. Drury, commenting that "[i]t seems to me that a provision of this sort would have serious implications both with respect to the construction and operation of the Distant Early Warning System."⁸² Drury, the deputy defence minister extraordinaire,⁸³ disagreed with Baldwin's

conditions. He informed Wershof that the US military was free to choose its telecommunications provider, whether Canadian or American, civilian or military. Drury stressed that under normal regulations Baldwin's condition would not apply to Canadian forces. Therefore, in Drury's opinion, Canadian government officials could not object to the American establishment of military circuits under military control for operational purposes. Drury did state that the Canadian government reserved the right, under Canadian laws, to refuse at any time additional American civil circuits established in Canadian territory.⁸⁴

The additional conditions recommended by the Departments of National Revenue and Transport were two examples of the complexity Canadian officials faced in regulating American participation in the DEW Line. Establishing the extent of Canadian participation proved to be equally complex. At the end of November 1954 Drury provided Léger with his own views on the extent of Canadian participation in the DEW project, in reference to the CDC's recommendation on 12 November "that at the same time the United States government be informed of Canada's intention to participate in the project, the nature and extent of such participation to be more precisely determined in the near future."⁸⁵ Drury argued that the main purpose of Canadian participation in the Distant Early Warning Line was to "give an indication of joint responsibility" and make it clear to the Canadian people that the United States was "not being permitted to carry out large projects in Canada on its own." This purpose was *partly* achieved through the joint press release on the 19th (i.e. north of the border). The central question, according to Drury, was what further measures of Canadian participation were necessary.⁸⁶

The Distant Early Warning project, Drury noted, was divided into two phases: (a) construction and installation; and (b) operation and maintenance. With respect to the latter, he noted, it was too early to consider the extent of Canadian participation, other than a few exceptions. He recommended that the RCAF consider its participation in the manning of the line and associated communications and proposed that Canadian agencies conduct logistic support studies of the line. The construction and installation phase was constrained, as noted, by the Canadian agencies' technical and managerial commitment to the Mid-Canada Line. Consequently, it was in the deputy minister's opinion that USAF designs and plans for the DEW Line "will have to be accepted, largely without scrutiny and that any financial responsibility that Canada might undertake would be in the way of a nearly blank cheque."⁸⁷

Drury suggested three possible courses of action for Canadian participation in the construction and installation phase of the DEW Line and their

advantages and disadvantages. First, the Canadian government could pay for all the electronic equipment produced in Canada, encouraging the line's general contractor to place orders in Canada. In Drury's view, however, production became expensive when the design authority spent "someone else's money." Secondly, the Canadian government could pay for the transportation costs for services rendered by Canadian agencies. Drury believed that this action, however, would be a limited one. He did not see this move influencing the volume of business for Canadian agencies, either positively or negatively. Total sum payments for transportation would not be very large because of Canada's limited resources in this field. Consequently, in Drury's opinion, this choice would relegate Canadian participation to a "subsidiary activity."⁸⁸

The third possibility was for the Canadian government to contribute a stipulated sum towards the overall cost of the DEW Line. This decision would limit Canadian liability but, Drury cautioned, if the sum was not substantial, then Canadian participation would be relegated to a minor role in the project. Though Drury did not necessarily advocate either of the first two courses of action, he was against the last option. As a result of increasing expenditures for air defence in the future, a gratuitous Canadian offer "of this character" would cause more difficulties than a solution to the current debate over the extent of Canadian participation.⁸⁹

At the beginning of December 1954, Lester Pearson was in New York for a session of the United Nations (UN) General Assembly. R. A. MacKay, upon review of Drury's suggestions, sent a report to Pearson, appending his own suggestions in light of Drury's thoughts on DEW Line participation. The theme was constant: MacKay recommended, due to the Canadian commitment to the Mid-Canada Line, that "we should direct our part in the DEW Line in such a way that the Canadian economy will get the maximum benefit from our contribution and should not be concerned that the dollar value of our participation in the DEW Line will be low relative to the total cost of the project."⁹⁰ In reference to the last part of his analysis, MacKay claimed that sums spent on improvements to the DEW Line's transportation system would benefit local communities.

MacKay favoured Drury's first suggestion. If the Canadian government committed to pay up to \$20 or \$30 million (MacKay's example) for Canadian-produced electronic equipment, this decision would encourage the continued use of this equipment and maintain employment in the Canadian electronics industry. MacKay rebutted Drury's belief that this decision would prove excessively expensive. The Canadian electronics industry, with respect

to the DEW Line, was limited in what it was expected to produce. Therefore, in MacKay's opinion, Drury's objections to this course of action were not to be taken too seriously. Conversely, MacKay agreed with Drury's opposition to the contribution of a stipulated sum. He recommended instead the earmarking of additional Canadian funds for the Southern Canadian early warning system (the Mid-Canada Line). After all, MacKay observed, any attempt to maintain a similar financial position vis-à-vis the United States would put a tremendous strain on Canadian resources.⁹¹

A week later MacKay reported to Pearson that Drury had convened a meeting on 7 December to discuss the continuing debate on Canadian participation in the DEW Line. In attendance were the deputy ministers of Northern Affairs and National Resources and Defence Production, prominent Canadian economist John J. Deutsch, General Foulkes, Wershof, and Drury. The participants agreed that the purpose of Canadian participation in the DEW project was two-fold. The first dimension was to indicate the joint nature of the project and make clear to the Canadian people that the United States was not being permitted to carry out, on its own, large defence projects in Canada. The second was to ensure Canada's continuing control of affairs in remote regions in which the operation of the DEW Line was the principal activity.⁹²

The group also considered the two phases of the project. Discussion of construction and installation again centred on the tension between the previous Canadian commitment to the Mid-Canada Line and the resulting American responsibility for this phase of the DEW Line. The representatives from National Defence and Defence Production ceded control of this phase to the United States. Along with Deutsch, Drury and the deputy minister of Defence Production argued that a Canadian financial contribution of anything less than \$50 million to construction and installation was "meaningless." These men argued that an inadequate financial contribution would prove to be no more than a "grant" to the United States government since there was no apparatus to supervise the expenditure of these funds. In their opinion, Canadians obtained nothing from a gesture of this sort. Rather, the Canadian government and its agencies should focus their efforts on the second phase, the operation and manning of the line.⁹³

Drury and Foulkes repeated Drury's earlier claim that National Defence intended to participate in the operation and manning of the line, but it was too soon to advise the government as to the scale and character of a sustainable degree of participation. The RCAF had been instructed to conduct studies of manning problems through the Joint Canada – United States Military

Study Group. In the defence representatives' view, the government was to limit itself to vague statements about Canadian participation in this phase. In other words, they suggested that the government "should not go beyond a general assertion that Canada intended to participate in the project when it advanced to the operation phase." The group did agree to include to the conditions governing the project the statement that Canada had a continuing interest in questions of resupply of the line and that the Canadian government reserved the right of consultation by the Americans on arrangements of this matter.⁹⁴

This meeting demonstrated the division of opinion between diplomats and defence officials on the matter of Canada's participation in the DEW Line. Wershof was disappointed that Drury and the deputy minister of Defence Production "could not see their way clear to recommending participation in the construction phase of the project." The deputy minister of Northern Affairs and National Resources also sided with the defence officials, stating that he was more concerned with Canadian participation in the operation phase than in construction. Drury, despite Wershof's opposition, informed the group that he was going to encourage his minister, Ralph Campney, to recommend that the Canadian government inform the United States government that Canada did not intend to participate in the construction and installation of the line, but did intend to participate in the line's operation, the nature and extent of this participation to be determined at a later date.⁹⁵

This meeting did not resolve the interdepartmental debate, which remained an open question by the end of 1954. MacKay reported to Pearson that Wershof, after Drury had made his concluding remarks, "reserved the position of this Department [External Affairs] on the proposed negative recommendation (1) [for no participation in construction] but of course undertook to bring the views of the meeting to your attention."⁹⁶ Pearson stood by his subordinates; his close relationship and "identity of views" with St. Laurent (Pearson had succeeded him as head of External Affairs) granted Pearson a more substantial amount of influence in the cabinet than his defence counterpart.⁹⁷ He noted to MacKay, "I am not prepared without further information to agree that we should have nothing to do with construction of this line."⁹⁸

Whatever the degree of Canadian participation in the construction of the DEW Line, the United States shouldered the burden of its cost. In its early years, considerable controversy surrounded the DEW Line. The Canadian government, especially its external affairs and defence ministries, failed to curb American actions in the Arctic. American military and civilian person-

nel did not respect Canadian sovereignty, leading scholar James Eayrs to make the apt observation that:

Disturbing rumours trickle down from the northlands into parliament and the press, having a greater influence on public opinion than the fine print of the 'Statement of Conditions to Govern the Establishment of a Distant Early Warning System in Canadian Territory,' an agreement negotiated in 1955 and made public by the government in an attempt to allay just such misgivings.⁹⁹

The Pentagon's early release of the 19 November 1954 joint announcement had the effects Canadian officials feared: Many American citizens allegedly believed that their country had taken over the Canadian Arctic. The Canadian public also debated whether Canada should have been solely responsible for the DEW Line. This debate led to questions on the utility of the Mid-Canada Line in an integrated radar warning system, in light of the DEW Line's capabilities.¹⁰⁰

The Distant Early Warning Line became operational on 15 May 1957. The line ran from Cape Dyer, Baffin Island, to Lisburne, Alaska. A second segment was added between Umnak, Aleutian Islands and Midway Island in the Pacific Ocean. The line was also extended to include Greenland. The line was composed of Doppler radars every 80 kilometres, smaller "gap filler" radar stations, and auxiliary radar stations every 160 kilometres. Station crews were a mix of military and civilian personnel, including Inuit employees.¹⁰¹ During its existence, the DEW Line provided Canada and the United States both military advantages with its early warning system and non-military benefits with its system of logistics.¹⁰²

Part of the line's construction involved the construction of airstrips adjacent to the stations. These airstrips were built by USAF Hercules transport planes parachuting Caterpillar D9 bulldozers onto the selected site. These bulldozers then levelled the ground for the airstrip. The bulldozers, too expensive to lift back out of the site, remained permanently with their work. Once the airstrip was complete, a hole was dug at the end of the runway and the bulldozer was buried. These airstrips were a boon to both military and civilian groups. Prior to their construction, planes landed only on naturally flat parts of the Arctic, such as raised beaches. The man-made runways permitted access to areas of the Arctic previously limited by the landscape. Many took advantage of these opportunities.

Geological field teams, for example, were able to undertake mapping projects of areas previously not available to them. These types of teams were

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based out of DEW Line radar stations, such as “Foxye 2,” on Baffin Island. To the west of Foxye 2 was “Foxye-Main” or Hall Beach, located on the Melville Peninsula. To the east of Foxye 2 was another station, Dewar Lakes. Stations were named for the terrain which they occupied. Foxye 2 was named for the Foxye Basin, north of the Great Plain of the Koukdjuak on Baffin Island. The topography around Foxye 2 was relatively flat, with relief in some parts ranging from 10 to 30 metres in height. Foxye 2 was sited for the DEW Line because its location enabled the station’s military personnel to look over the horizon.

Stations such as Foxye 2, located at the eastern end of the line, were serviced by the major air hub at Sondre Stromfjord, Greenland. Transport planes designed for short take-off and landing (STOL), such as DC-3 Dakotas and deHavilland Twin Otters, brought in supplies via the built airstrips. Field teams, such as the aforementioned one located at Foxye 2, usually received their equipment, mail, and groceries from Winnipeg; in many cases the only telephone available was at the closest DEW Line station. The entire DEW Line was maintained on Central Time because the lines of longitude converged in the Arctic.¹⁰³

The Distant Early Warning Line had a major military and scientific impact on the Arctic. The logistical benefits it provided were just as important as its military purposes. DEW Line stations were also serviceable beyond tracking potential enemy aircraft or intercontinental ballistic missiles. The stations provided local security. If a civilian helicopter, contracted for research, became unserviceable in the field, personnel from the nearest DEW Line station could track the aircraft’s last known position and help in its recovery.¹⁰⁴ Additionally, after all the Canadian government’s concerns over the establishment of the early warning lines, the DEW Line had a major positive impact on Canadian sovereignty in the Arctic. Increased accessibility translated into an increased Canadian presence in the Arctic, military and civilian. In the case of the latter, civilian researchers were able to discover new natural resources. One example was the discovery of some of the world’s largest iron deposits in the northern part of Baffin Island. These deposits, however, await the appropriate form of logistics for their proper exploitation.

The limitations of the original technology of the 1950s meant that more stations were initially built than eventually needed. By the 1960s, technological advances allowed for greater radar coverage with fewer stations. In 1963, all 31 gap filler sites (also known as Intermediate Sites, or “I Sites”) were abandoned.¹⁰⁵ This decision had environmental consequences. These stations produced debris and pollution, caused by PCBs in their transformers.¹⁰⁶

Clean up began in the late 1980s, when DEW Line stations were shut down or modernized as part of the North Warning System.

Canada's cooperation with the United States on the DEW Line formed the major part of the Canadian government's struggle for control of the early warning systems on its territory. In the end, the United States government paid the DEW Line's construction and installation costs and sent large numbers of personnel to the Arctic to operate the line's radar stations. Canadian officials worked hard to avoid American domination of the DEW project. Despite these officials' worries, the DEW Line had the unintended consequence of bolstering Canadian sovereignty through commercial exploration and exploitation.

1953 and 1954 were crucial years in North American air defence cooperation. Friendly relations between Canada and the United States, coupled with the growing threat of the Soviet Union, brought the two countries closer together through joint plans to defend the continent. In the face of American pressure to build an effective air defence network, the realities of interest, history, and geography meant that the Canadian government possessed few other alternatives other than to support American designs. Canadian political and military leaders also accepted the reality of the Soviet Union's power and its increasing capabilities to inflict crippling damage on North America. Additionally, the Canadian commitment to effective continental air defence was in line with the country's military commitments to NATO in Europe and to the UN in Korea (1950-1953). The Canadian government, in a challenging balancing act, made continental air defence efforts one element of its three-pronged defence policy following the tradition of collective security.

Canadian authorities struggled to control continental air defence on their territory. Once committed to the concept of defence-in-depth, with early warning networks, anti-aircraft units, and interceptor fighter aircraft, Canadian officials attempted to make a significant contribution to each joint defence project. They worked to control the overall costs of each project and maximize their country's economic benefits by establishing a principle of preference for Canadian industry. The term "sovereignty" in continental air defence meant more than respect for Canadian territory. In effect it meant obtaining American respect for Canadian decisions in each step of a joint effort, regardless of the degree to which these decisions deviated from the plans of Canada's southern neighbour. Unfortunately, this respect was not always forthcoming.

The joint Canada-United States decision in 1954 on the construction of the DEW Line represents Canada-United States Cold War defence rela-

tions in microcosm. For the Canadian officials involved in this decision, these relations were often characterized by American pressure to coordinate Canadian defence policies with American defence policy, concerns over territorial sovereignty, tense competition between American and Canadian business interests, heightened Canadian and American public awareness on the nature of joint defence cooperation, and a Canadian struggle for equal partnership in continental defence projects. Canadian officials' attempt at delineating the American role in the DEW Line project was symptomatic of the Canadian struggle for control. The Canadian government did not passively subordinate its continental defence policy to the United States in this regard, but an unwieldy list of conditions governing American participation in the DEW Line did not have the desired result. Charles Wilson's observations notwithstanding, Canadian public concerns over the American presence in the Arctic remained for many years after the DEW Line's construction began.

This examination of Canada-United States collaboration on the DEW Line during 1954 is important for an understanding of Canadian and American perspectives of each other over a fundamental issue. There certainly is a tradition of Canada-U.S continental defence cooperation; this cooperation began in earnest during the Second World War, entered its crucial period in the Cold War in the 1950s, and has continued to the present day. A constant element in this cooperation is the issue of national control. Consistently missing in North American defence cooperation is an appropriate understanding of the national perspectives behind desires for control. With respect to the construction of the DEW Line, each side attempted to exert its degree of control as much "as practicable."

Notes

- 1 Quote from a press conference. Despatch No. 1934, The Canadian Ambassador, Washington, D.C., to the Secretary of State for External Affairs, 8 October 1953, File CSC 1855:1 Part 1 Continental Air Defence of North America, Volume 21417, Series B-1, RG 24, Library and Archives Canada, Ottawa (hereafter LAC), 2.
- 2 In the late Cold War and early twenty-first century, American leaders attempted to garner Canadian support for the extensive missile defence of North America. In the 1980s, US President Ronald Reagan proposed such a defence through the Strategic Defense Initiative (SDI) programme. In 2005, the Canadian prime minister rejected Canadian participation in US President George W. Bush's ballistic missile defense (BMD) proposal.
- 3 An important element to keep popular views in perspective is the country's population. In 1953 there were 159,565,000 Americans and in 1954 there were 162,391,000. United States Department of Commerce, Bureau of the Census, *Historical Statistics of the United States: Colonial Times to 1970*, Bicentennial ed., part 1 (Washington, D.C.: GPO, 1975), 8. In 1953 and 1954 there were 14,845,000 and 15,287,000

- Canadians, respectively. M.C. Urquhart, ed., *Historical Statistics of Canada* (Toronto: The Macmillan Company of Canada, Ltd, 1965), 14.
- 4 Willis C. Armstrong, "The American Perspective," in *Canada-United States Relations*, ed. H. Edward English (New York: The Academy of Political Science, 1976), 1-13; Joseph Barber, *Good Fences Make Good Neighbors: Why the United States Provokes Canadians* (Indianapolis and New York: The Bobbs-Merrill Company, Inc., 1958); David H. Flaherty and William R. McKercher, eds., *Southern Exposure: Canadian Perspectives on the United States* (Toronto and New York: McGraw-Hill Ryerson Ltd, 1986); Hugh L. Keenleyside, *Canada and the United States: Some Aspects of Their Historical Relations* (New York: Alfred A. Knopf, 1952); and Peyton Lyon, "The Canadian Perspective," in *Canada-United States Relations*, 14-26.
- 5 Benson L. Grayson, ed., *The American Image of Russia 1917-1977* (New York: Frederick Ungar Publishing Co., 1978); Deborah Welch Larson, *Anatomy of Mistrust: U.S.-Soviet Relations During the Cold War* (Ithaca, NY: Cornell University Press, 1997); and J. D. Parks, *Culture, Conflict, and Coexistence: American-Soviet Cultural Relations, 1917-1958* (Jefferson, NC: McFarland & Company, Inc., 1983).
- 6 Larry D. Collins, "Canadian-Soviet Relations During the Cold War," in *Canadian-Soviet Relations 1939-1980*, ed. Aloysius Balawyder (Oakville, ON: Mosaic Press, 1981), 43. Collins explains that the Canadian government and its people did not accept "uncritically the seemingly almost senseless hostility which had created the [post-Second World War super-power] bipolarity." *Ibid.*, 42.
- 7 Collins, "Canadian-Soviet Relations During the Cold War," 43. The "basic patterns of her [Canada's] Soviet policy in particular were calculated to a significant extent to minimize pressures on Canadian sovereignty emanating from south of the border." *Ibid.*, 42.
- 8 William R. Willoughby, *The Joint Organizations of Canada and the United States* (Toronto and Buffalo: University of Toronto Press, 1979), 109.
- 9 *Ibid.*, 110.
- 10 John W. Warnock, *Partner to Behemoth: The Military Policy of a Satellite Canada* (Toronto and Chicago: New Press, 1970), 106-107.
- 11 Willoughby, *The Joint Organizations of Canada and the United States*, 10.
- 12 Brian Cuthbertson, *Canadian Military Independence in the Age of the Superpowers* (Toronto: Fitzhenry & Whiteside, 1977), 24.
- 13 Warnock, *Partner to Behemoth*, 107-108.
- 14 Cuthbertson, *Canadian Military Independence*, 27.
- 15 *Ibid.*, 31.
- 16 "Estimate of Military Requirements for the Defense of the Canada-U.S. Area," 5 January 1950, in *Records of the Joint Chiefs of Staff: Europe and NATO: Part II: 1946-53 reel 5, fr. 2194*.
- 17 For details on the various joint air force plans approved through the PJBD, see Joseph T. Jockel, *No Boundaries Upstairs: Canada, the United States, and the Origins of North American Air Defence, 1945-1958* (Vancouver: University of British Columbia Press, 1987), 50-59.
- 18 Cuthbertson, *Canadian Military Independence*, 26.
- 19 *Ibid.*, 37.
- 20 Before the Distant Early Warning Line was recommended for construction in summer 1954, this line was referred to as the Northern Canadian Detector Line, Northern Canadian Line, or Northern Detector Line.
- 21 The two Canadians were John S. Foster (McGill University) and G. R. Lindsey of the Defence Research Board (DRB). For a review of the study groups and

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- their reports in 1951 and 1952, see Jockel, *No Boundaries Upstairs*, 61-67.
- 22 At the time of this presidential transition, the "agreed-upon" US military strategy was the development of offensive capabilities at the expense of defence. Jockel, *No Boundaries Upstairs*, 61. For the domestic bureaucratic and ideological reasons behind the American emphasis on Strategic Air Command's offensive strike capabilities, see James Meikle Eglin, *Air Defense in the Nuclear Age: The Post-War Development of American and Soviet Strategic Defense Systems* (New York: Garland, 1988).
- 23 For a historiographical review of conventional interpretations on NORAD and early Cold War North American continental defence, see Alexander W.G. Herd, "As Practicable: Canada-United States Continental Air Defense Cooperation 1953-1954" (M.A. thesis, Kansas State University, 2005), 6-11.
- 24 At the time of this report, the MSG study of the Arctic line, formerly known as both Project Counterchange and Project Corrode, was titled "Project 572." Report by the Canada-United States Military Study Group, 3 June 1954, in U.S. Department of State, *Foreign Relations of the United States, 1952-1954*, Vol. VI, pt. 2, 2127-2128 (hereinafter referred to as *FRUS*, with appropriate year and volume numbers).
- 25 Report by the Canada-United States Military Study Group, 3 June 1954, in *FRUS, 1952-1954*, Vol. VI, pt. 2, 2128.
- 26 Extract from Journal of Permanent Joint Board on Defence, Enclosure to Memorandum from Acting Under-Secretary of State for External Affairs to Secretary of State for External Affairs, 17 July 1954, in Canada, Department of External Affairs, *Documents on Canadian External Relations* (Ottawa: Queen's Printer, 1967), 1954, Vol. 20, Doc. 468 (hereinafter referred to as *DCER*, with appropriate year and volume numbers).
- 27 Extract from Journal of Permanent Joint Board on Defence, Enclosure to Memorandum from Acting Under-Secretary of State for External Affairs to Secretary of State for External Affairs, 17 July 1954, in *DCER, 1954*, Vol. 20, Doc. 468.
- 28 In 1954, MacKay served as Deputy Under-Secretary before his promotion to Associate Under-Secretary. John Hilliker and Donald Barry, *Canada's Department of External Affairs, Vol. 2, Coming of Age, 1946-1968* (Toronto: The Institute of Public Administration of Canada; Montreal, Kingston, ON and Buffalo: McGill-Queen's University Press, 1995), 88-90.
- 29 Memorandum from Acting Under-Secretary of State for External Affairs to Secretary of State for External Affairs, 10 June 1954, in *DCER, 1954*, Vol. 20, Doc. 463.
- 30 Memorandum, Discussion at the 208th Meeting of the National Security Council, 29 July 1954, Box 5, NSC Series, Papers of Dwight D. Eisenhower as President, 1953-61, Dwight D. Eisenhower Library, Abilene, Kansas (hereafter *DDEL*), 5.
- 31 *Ibid.* In 1953 the US Department of Defense spent \$17,054,333,000 (US). The US government's total expenditure that year was \$74,119,798,000 (US). In 1954 American defence spending reached \$40,625,674,000. That year total US federal outlays were \$70,889,744,000 (US). *Historical Statistics of the United States: Colonial Times to 1970*, Bicentennial ed., part 2, 114. On the other side of the border, the Canadian government spent \$1,857.8 million (CDN) on "Defence and mutual aid" in 1953. Total Canadian federal expenditure that year was \$4,350.5 million (CDN). The next year spending was \$1,687.9 million (CDN) and \$4,275.3 million (CDN), respectively. Urquhart, ed., *Historical Statistics of Canada*, 200, 202.
- 32 Extract from the *New York Times*, 11 October 1953, File CSC 1855:1 Part

- 1 Continental Air Defence of North America, Volume 21417, Series B-1, RG 24, LAC. Sprague was joined on the subcommittee by Senators Leverett Saltonstall (Republican, Massachusetts; head of the Senate Armed Services Committee), Styles Bridges (Republican, New Hampshire), and Richard B. Russell (Democrat, Georgia).
- 33 Report on Continental Defense to the Senate Armed Services Committee, 18 March 1954, Sprague, Robert C. Material, Box 33, Administration Series, Papers of Dwight D. Eisenhower as President, 1953-61, DDEL.
- 34 Memorandum, Discussion at the 208th Meeting of the National Security Council, 29 July 1954, Box 5, NSC Series, Papers of Dwight D. Eisenhower as President, 1953-61, DDEL, 5.
- 35 *Ibid.*, 6.
- 36 Extract from Minutes of Meeting of Cabinet Defence Committee, 25 June 1954, in *DCER*, 1954, Vol. 20, Doc. 466.
- 37 Record of Cabinet Defence Committee Decision, 100th Meeting, 25 June 1954, File CSC 1855:4 Part 1 Continental Air Defence of North America – Mid Canada Line (Secret), Volume 21419, Series B-1, RG 24, LAC; and Extract from Minutes of Meeting of Cabinet Defence Committee, 25 June 1954, in *DCER*, 1954, Vol. 20, Doc. 466.
- 38 Memorandum from Minister of National Defence to Cabinet, 29 July 1954, Enclosure to Deputy Minister of National Defence to Secretary of State for External Affairs, 9 August 1954, in *DCER*, 1954, Vol. 20, Doc. 471.
- 39 Extract from Cabinet Conclusions, 18 August 1954, in *DCER*, 1954, Vol. 20, Doc. 474.
- 40 Extract from Cabinet Conclusions, 11 August 1954, in *DCER*, 1954, Vol. 20, Doc. 473.
- 41 Memorandum from Head, Defence Liaison (I) Division, to Assistant Under-Secretary of State for External Affairs, 5 November 1954, Enclosure 1 to Memorandum from Assistant Under-Secretary of State for External Affairs to Under-Secretary of State for External Affairs, 6 November 1954, in *DCER*, 1954, Vol. 20, Doc. 479.
- 42 *Ibid.*
- 43 Memorandum from Secretary of State for External Affairs and Minister of National Defence to Cabinet Defence Committee, 10 November 1954, in *DCER*, 1954, Vol. 20, Doc. 481.
- 44 Terms of Reference, RCAF-USAF Military Characteristics Committee, DEW Group, Incl. 1 of Report of USAF-RCAF Military Characteristics Committee DEW Group, 7 September 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC.
- 45 *Ibid.*
- 46 Report of USAF-RCAF Military Characteristics Committee DEW Group, 7 September 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 3. (TAB C of “Proposed Revisions to the Report of the USAF-RCAF Military Characteristics Committee, DEW Group, and Comments thereon by the U.S. Section, Canada-U.S. Military Study Group,” 10 December 1954).
- 47 Draft Cabinet Defence Committee Minute, Continental Defence, Distant Early Warning Line, 12 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 3.
- 48 Memorandum from Secretary of State for External Affairs and Minister of National Defence to Cabinet Defence Committee, 10 November 1954, in *DCER*, 1954, Vol. 20, Doc. 481.
- 49 Draft Cabinet Defence Committee Minute, Continental Defence, Distant Early Warning Line, 12 November

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- 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 1-2.
- 50 Ibid., 2.
- 51 Ibid., 3-4.
- 52 Ibid., 5-6.
- 53 Memorandum for the Minister – Continental Defence: Distant Early Warning Line, 17 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 1.
- 54 Draft Cabinet Defence Committee Minute, Continental Defence, Distant Early Warning Line, 12 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 11-12.
- 55 Numbered Letter No. D-1369, The Under-Secretary of State for External Affairs to The Canadian Embassy, Washington, D.C., 16 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC.
- 56 Note No. 791, A.D.P. Heeney to John Foster Dulles, 16 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 1-2.
- 57 Ibid.
- 58 In 1951, Canadian and American officials initially agreed to construct 33 radar stations in eastern Canada as the Pinetree network. By early 1953, American officials had requested nine additional stations, six in Ontario and three in British Columbia. The Canadian government then pressed certain conditions to the joint construction and operation of the Pinetree stations, including the exclusive use of Canadian electronic equipment. See Herd, “As Practicable: Canada-United States Continental Air Defense Cooperation 1953-1954,” 16-20.
- 59 Draft Conditions to Govern participation by the United States in the establishment of a Distant Early Warning System in Canadian Territory, 15 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 2.
- 60 The Canadian government considered the appointment of a “Special Commissioner for the Project” and liaison officers for the American construction. Ibid., 1.
- 61 Draft Statement of Conditions, 15 November 1954, Enclosure to Letter D-1369, Under-Secretary of State for External Affairs to Ambassador in United States, 16 November 1954, in *DCER*, 1954, Vol. 20, Doc. 483.
- 62 Draft Conditions to Govern participation by the United States in the establishment of a Distant Early Warning System in Canadian Territory, 15 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 3-6.
- 63 Ibid., 2-5.
- 64 Ibid., 2.
- 65 No. EX-2136, The Secretary of State for External Affairs to Head of Post, Washington, D.C., 22 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 1.
- 66 Ibid.
- 67 Ibid., 1-2.
- 68 Ibid., 1-3.
- 69 Press Release No. 81, 19 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC.
- 70 No. EX-2122, The Secretary of State for External Affairs to The Canadian

- Ambassador, Washington, D.C., 19 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 1.
- 71 Ibid., 2.
- 72 Ibid., 3.
- 73 The Under-Secretary of State for External Affairs to various departments, 22 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 1.
- 74 Deputy Minister of Northern Affairs and National Resources to The Under-Secretary of State for External Affairs, 25 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC.
- 75 “Removable property” was defined as anything “brought into Canada or purchased in Canada and placed on the sites, including readily demountable structures.” Draft Conditions to Govern participation by the United States in the establishment of a Distant Early Warning System in Canadian Territory, 15 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 3.
- 76 Deputy Minister of National Revenue, Customs and Excise, to The Under-Secretary of State for External Affairs, 29 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC.
- 77 The Under-Secretary of State for External Affairs to The Deputy Minister, Department of National Revenue, Customs and Excise Division, 7 December 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC.
- 78 Deputy Minister of National Revenue, Customs and Excise, to The Under-Secretary of State for External Affairs, 9 December 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC.
- 79 Under-Secretary of State for External Affairs to The Deputy Minister, Department of National Defence, 10 December 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 1.
- 80 Deputy Minister of Transport to The Under-Secretary of State for External Affairs, 2 December 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC.
- 81 Under-Secretary of State for External Affairs to The Deputy Minister, Department of Transport, 6 December 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 2.
- 82 Under-Secretary of State for External Affairs to The Deputy Minister, Department of National Defence, 6 December 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 2.
- 83 Having had previous MND Brooke Claxton’s “utmost confidence” after he moved to DND from External Affairs in 1948, Drury worked faithfully for both Claxton and Campney. As the sole deputy minister for all the military services, Drury assumed a central position in the making of Canada’s defence policy. His duties included the department’s administrative procurement and financial supervision. James Eayrs, *In Defence of Canada*, Vol. 3, *Peacemaking and Deterrence* (Toronto: University of Toronto Press, 1972), 113; and David J. Bercuson, *True Patriot: The Life of Brooke Claxton 1898-1960* (Toron-

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- to and Buffalo: University of Toronto Press, 1993), 162, 202.
- 84 Deputy Minister, National Defence to The Under-Secretary of State for External Affairs, 9 December 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC.
- 85 Draft Cabinet Defence Committee Minute, Continental Defence, Distant Early Warning Line, 12 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 11.
- 86 C. M. Drury to Jules Léger, 30 November 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 1.
- 87 *Ibid.*, 1-2.
- 88 *Ibid.*
- 89 *Ibid.*
- 90 The Secretary of State for External Affairs to Head of Post, Canadian Delegation to Ninth Session of the General Assembly, New York, N.Y., 2 December 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 3-4.
- 91 *Ibid.*, 4.
- 92 Memorandum for the Minister, Canadian Participation in the Distant Early Warning Line, 9 December 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 1.
- 93 *Ibid.*, 2.
- 94 *Ibid.*, 3.
- 95 *Ibid.*
- 96 *Ibid.*, 4.
- 97 Lester B. Pearson, *Mike: The Memoirs of the Right Honourable Lester B. Pearson*, vol. 2, 1948-1957, ed. John A. Munro and Alex I. Inglis (Toronto and Buffalo: University of Toronto Press, 1973), 28.
- 98 Handwritten note by LBP, Memorandum for the Minister, Canadian Participation in the Distant Early Warning Line, 9 December 1954, File 50210-C-40 Part 2 Canada U.S. Radar Defence System – Distant Early Warning Line, Volume 5926, Series A-3-b, RG 25, LAC, 4.
- 99 Eayrs, *Northern Approaches: Canada and the Search for Peace* (Toronto: Macmillan, 1961), 10.
- 100 Warnock, *Partner to Behemoth*, 114-117.
- 101 Don Nicks, John Bradley, and Chris Charland (NBC Group), *A History of the Air Defence of Canada 1948-1997* (North Bay, ON: Commander Fighter Group, 1997), 39.
- 102 Richard K. Herd, B.Sc, D.I.C., PhD, Curator, National Collections, Geological Survey of Canada, interview by author, Ottawa, Canada, April 2005. Dr. Herd undertook field work from June to September, 1974 based out of Foxe 2 (also known as Longstaff Bluff) DEW Line radar station, on the west coast of Baffin Island.
- 103 Information courtesy Dr. R.K. Herd.
- 104 This information is based on the personal experience of Dr. R.K. Herd in the summer of 1974.
- 105 NBC Group, *A History of the Air Defence of Canada 1948-1997*, 40.
- 106 Information courtesy Dr. R.K. Herd. See also P.W. Lackenbauer and Matthew Farish, "The Cold War on Canadian Soil: Militarizing a Northern Environment," *Environmental History* 12, no. 3 (2007): 940-41; and Heather Myers and Don Munton, "Cold War, Frozen Wastes: Cleaning up the Dew Line," *Environment and Security* 4 (2000): 119-38.

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