The Distant Early Warning (DEW) Line

A Preliminary Assessment of its Role and Effects upon Northern Canada

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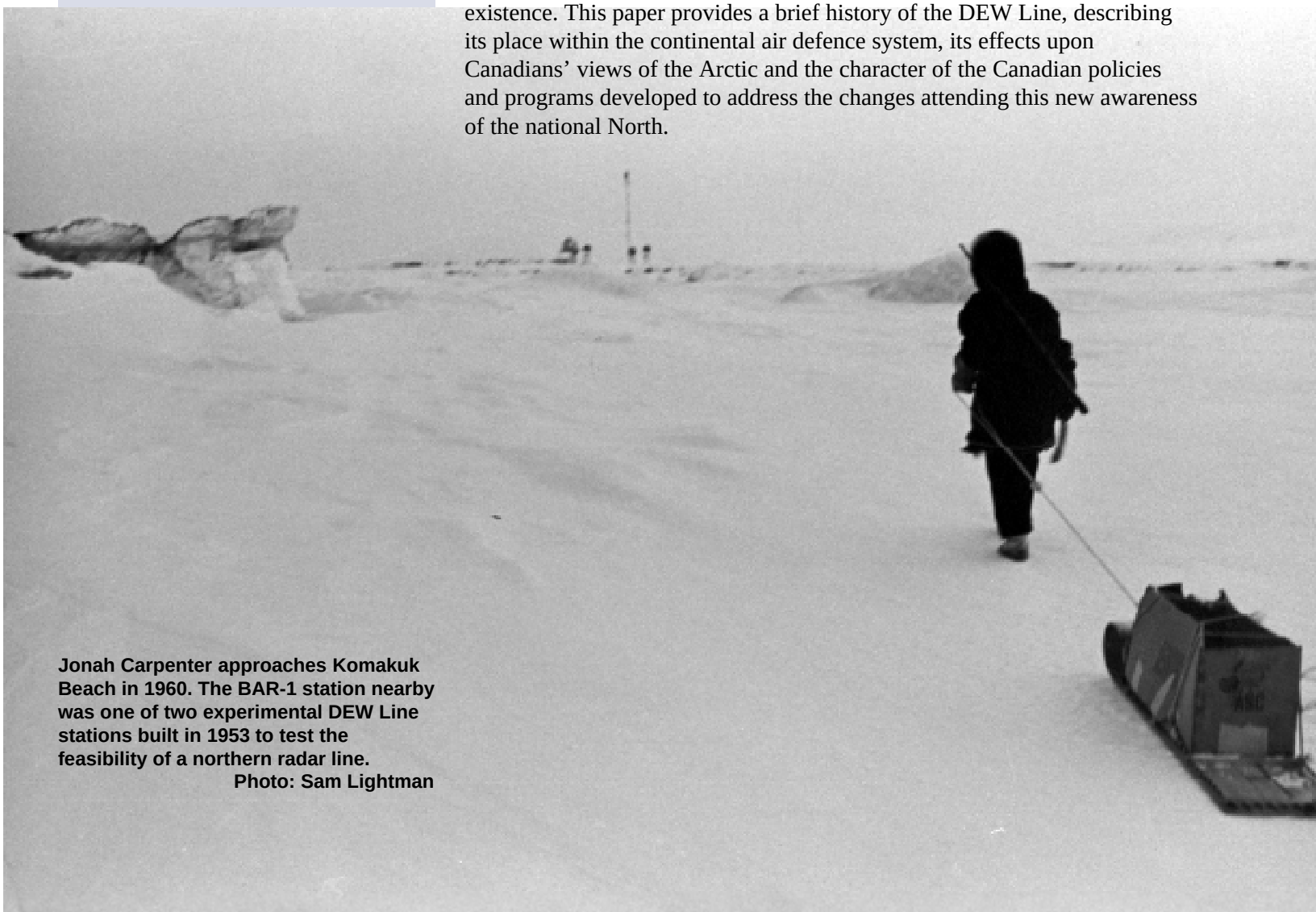
Introduction

The northernmost extension of a continental air defence system, the construction and operation of the Distant Early Warning (DEW) Line affected several areas of Canadian interest. From a southern Canadian perspective the DEW Line reflected elements of contemporary Canadian military policy, raised concerns over northern sovereignty, created new infrastructure supporting the industrial development of the arctic and prompted the development of northern science and technology.

The DEW Line and associated developments brought the western Arctic Inuvialuit and central and eastern Arctic Inuit into much closer contact with southern Canada. The late 1940s through the 1980s was a period of considerable challenge to arctic aboriginal peoples as traditional life ways continued to adapt to these expanded contacts with southern newcomers. The initial economic and spiritual connections with newcomers eroded while new social and cultural relationships with the national government were crafted.

The DEW Line was a central feature of this period, in many respects it acted as both catalyst and indicator for the changes that took place during its existence. This paper provides a brief history of the DEW Line, describing its place within the continental air defence system, its effects upon Canadians' views of the Arctic and the character of the Canadian policies and programs developed to address the changes attending this new awareness of the national North.



Jonah Carpenter approaches Komakuk Beach in 1960. The BAR-1 station nearby was one of two experimental DEW Line stations built in 1953 to test the feasibility of a northern radar line.
Photo: Sam Lightman

The DEW Line in Continental Air Defence

The concept of a unified approach to North American continental defence evolved with the developing possibilities of an inter-continental military threat to the United States and Canada after the Second World War. Mutual defence aid was promised by both countries politicians as early as the mid-1930s. The first concrete arrangement for continental defence was the creation of the Permanent Joint Board on Defence during the Second World War. More detailed agreements, generally addressing aspects of continental air defence, were made through the late 1940s and into the 1950s. These culminated in the creation of the North American Air Defence Command (NORAD) in September, 1957. Thus by the late 1950s the defence of the North American continent was integrated into a single organization controlling all aspects of early warning, interception, and battle direction.1

In 1945, after half a decade of commitment to total war the people of Canada and the United States demanded a return to ordinary life. Consequently there were large and immediate reductions in the armed forces of both countries. However the collapse of democratic governments behind the Iron Curtain in eastern Europe and Truman's acceptance of the Marshall Plan as an economic barrier to Communist expansion set the stage for continuing confrontation. Tensions between the West and Communism made an early return to peace impossible to consider.2

The character of confrontation in this period also set the stage for North American military response through the 1950s. The successful airlift overcoming the year long Soviet blocade of Berlin and the importance of airpower in the Korean War were lessons not lost on American military planners. Coupling this experience with the western public s desire for a demilitarized society and the American monopoly of the atomic bomb during the late 1940s led to the creation of a doctrine of massive nuclear response to feared Soviet aggression.3 Thus the perception of modern war was changed from large conventional armies meeting on a European battlefield to crippling inter-continental nuclear air attacks on enemy populations and industrial centres.

Two RCAF officers note sighting information at the Cape Perry Main Station.

Photo: DND CPU-3532

To achieve this military position the American military developed a nuclear weapons delivery force, Strategic Air Command (SAC). Capable of reaching into the heart of the Soviet Union, the bombers of SAC were touted as a deterrent to a perceived threat of Soviet conventional military incursions into western Europe. There was an acknowledgement of the possibility of Soviet attack on North America but military planners in the late 1940s considered themselves at least a decade ahead of any threat. In response to heightened tension in the spring of 1948 the air force established an active air defence of Alaska. The equipment and organizational limitations obvious during this effort pointed out the aerial vulnerability of North America. Several study groups subsequently sponsored by the United States government came to similar conclusions.

Further, the operational introduction of long range bombers into the Soviet Air Force in the spring of

1948 and the successful explosion of a Soviet atomic bomb in the following year shocked Western governments. There was even concern about the possibility of nuclear-armed rockets.4 The sudden and complete nature of these achievements caused a revision in the assessment of Soviet capabilities. In 1950 military planners assumed the Soviet Union would be able to launch a destructive attack on North America by the summer of 1954.

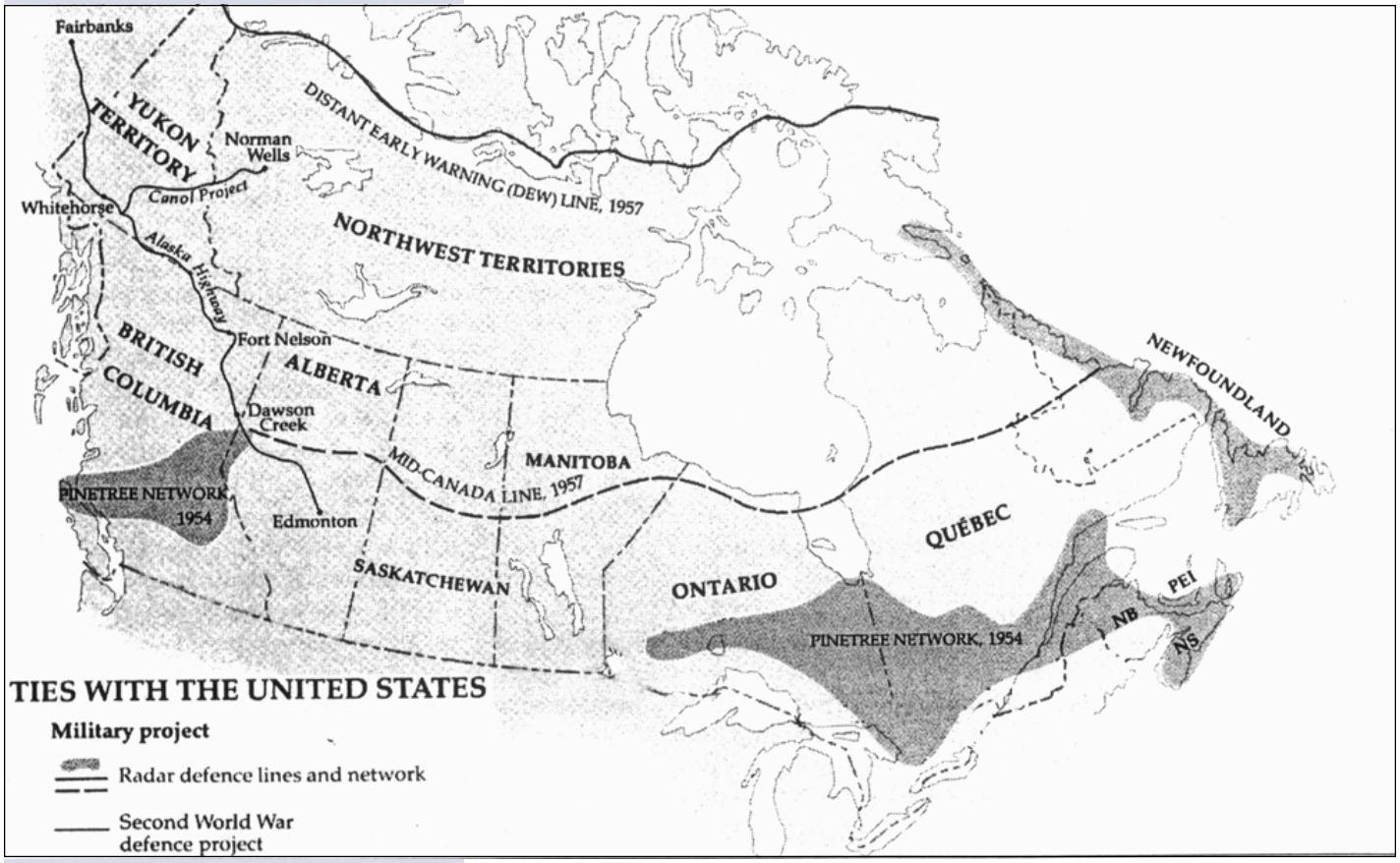
This startling reappraisal of Soviet attack capability and the deficiencies of North American air defences raised political and military interest in continental air defence in both Canada and the United States. The history of continental air defence was shaped by the events of the Cold War, economic constraints, developing military doctrine, and technological capacity. Through the early and mid-1950s continental air defence maintained a high priority, some $20 billion eventually being invested in the system. The bulk of this money was used for the design, development, and construction of the DEW Line.5

The continental air defence system erected through the 1950s can best be understood as an integrated technological fortification. Its chief components consisted of a detection and battle direction system, largely based upon radar and communications networks, and interception and destruction units, generally jet fighters and guided missiles. Most of the detection/direction system was built on Canadian territory and hence its impact was largely socio-cultural, with additional economic and technological influences.

The detection/direction system was expected to fulfil two functions: initial detection of advancing enemy forces and ongoing information of enemy activities to aid defending forces. Canadian and American military planners considered the development of an arctic early warning radar system with interceptor airfields, in 1946. Code-named SUPREMACY, the United States Air Force system envisaged some 411 radar installations across North America with 37 staffed stations in Canada and Greenland.7 Estimated to cost nearly $400 million to build and requiring 39,000 men to operate, the system was unwieldy and expensive to an extreme. As well, the great distance between the Arctic warning line and direction systems in the south, meant that while a warning might be had there would be no effective direction of defending fighters against attacking bombers. Further the expected direction of attack was from either east or west. The plans, especially those for the Arctic warning line, were rejected by Congress.

However a much reduced version of SUPREMACY, known as the Modified Plan, was approved by Congress in 1948. Its central premise was the assumption that a Soviet attack would focus on the population and industrial centres of the north-east and north-west areas of the United States. The system therefore provided a brief warning for civil defence and direction for point defence for those areas.8 The limitations of existing radar, the great expense of attempting continent-wide coverage, and the assessment of possible Soviet attack strategies all favoured the development of such a point defence plan. The system became operational in April, 1953.

The Canadian government adopted a similar approach to air defence. Negotiations with American officials led to Canadian approval for a northern extension of the Modified Plan, dubbed the Pine Tree System, in April, 1951.9 Consisting of over 30 radar stations in eastern Canada and along the Atlantic and Pacific coasts, the Pine Tree System was primarily designed to provide direction to American air force interceptor aircraft. Although almost



Continental air defence systems in Canada. N. Hillmer, Hist. Atlas of Canada, Pl. 57 Vol. III

entirely in Canada the American defensive character of the line was recognized in the cost-sharing agreement worked out between the two countries. Canada contributed one-third of the estimated $450 million cost of the project. The Pine Tree System began operations in June, 1954, a little over a year after the completion of the Modified Plan stations.

Three significant changes in the early 1950s affected the subsequent development of the North American continental air defence system. Continuing improvement of radar equipment, a changing assessment of Soviet attack strategy, and the growing Canadian commitment to NATO forces in Europe all shaped the history of the Mid Canada and DEW Lines.

Technical improvements to radar equipment vastly improved its capability. Much longer range and more accurate information was available from the newer sets developed in the early 1950s. More important for the northern applications however, was the introduction of an auto-warning capacity. In areas with limited traffic the auto-device warning alerted personnel when the radar picked up a sighting. This greatly reduced the staffing requirements for radar stations. The earlier Pine Tree stations required 200 staff. With the new equipment a comparable DEW Line station could provide better coverage with only 10 men.10 This technical improvement not only made Arctic radar stations far more affordable but also increased their potential contribution to continental defence.

By 1952 military planners no longer assumed the main Soviet attack would be on cities and industrial plant or from the east or west. The revised plan assumed a first strike via a polar approach against the American nuclear retaliation force, the airfields and bombers of SAC. Scattered across the American Midwest these fields were unprotected from the north by the point defence networks of either the Modified Plan or the Pine Tree Line. The

large gap in the defences of mid-continent became an immediate concern. The LINCOLN Study group commissioned by the American armed forces in 1952 to report on this deficiency recommended a northern extension of radar coverage to provide early warning and a broader band of fighter direction.11

As in the 1940s the high costs of the proposed extension caused politicians in the United States and Canada to consider a reduced commitment to continental defence. However, the pace of Soviet weapons development, the Soviets introduced the M-4 Bison inter-continental jet bomber in 1952 and successfully detonated a hydrogen bomb in the late summer of 1953, strengthened the hand of the proponents of air defence. President Truman responded by making continental defence the United States highest military priority. In both Canada and the United States the military were instructed to develop plans for this northward extension of the air defence system.

In Canada, the federal government was faced with a difficult choice. It was under pressure to control military expenditures, which continued to rise markedly through the early 1950s.12 Yet it was also faced with having to meet the demands for continental defence in addition to commitments for conventional military and air forces made to the NATO allies in Europe.13 The growing American military presence in Canada was also causing some politically embarrassing questions about Canadian sovereignty. To address these concerns and to maintain some control over national contributions to continental defence the Canadian government moved to establish its own continental defence initiative. The result was the Mid-Canada Line.14

The Mid-Canada Line blocked the radar coverage gap left between the eastern and western sectors of the Pine Tree Network. Its primary operational purpose was the extension of the interceptor direction and control area into the mid-north of Canada. Politically, however, the Line fulfilled several other purposes. Paid for exclusively by the Canadian taxpayer, the Mid-Canada Line utilized the Canadian-developed McGill Fence and electronics equipment supporting research and development. It was built by Canadian contractors and labour contributing to the national economy, and to address concerns about Canadian sovereignty, it was staffed by Canadian military personnel. Perhaps the most important aspect was the economic factor. Relatively modest in cost, the Mid-Canada Line freed the Canadian government from American pressure to contribute to the grandiose and far more expensive plans being prepared for Arctic defence lines. Approved by Parliament in June, 1954 the Mid-Canada Line became operational in 1957.

President Truman’s commitment to continental defence in late 1952 was in fact a commitment to build an Arctic defence line if it was at all feasible. With the Mid-Canada Line filling in coverage in the mid-continent, northern early warning was becoming increasingly useful for both civil defence and nuclear strike force purposes. Design and successful testing took place in Alaska and Yukon through 1953 and early 1954. Bilateral negotiations followed. On 5 May, 1955 the Canadian Government gave approval for the construction of some 43 radar warning and communication stations across the Canadian Arctic. A massive construction project immediately invaded the north. Designed to provide six hours advance notice of attack the northern, or Distant Early Warning, line was the last bastion erected of the North American continental air defence fortress. Its substantial operational presence continues to the present through the North Warning System.

Building the DEW Line

The United States Air Force was given the responsibility to build and operate the northern warning line. Their first step was to award a contract to the Western Electric Company in December 1952. Known as Project CORRODE,15 the contracted work included the design and testing of two prototype stations in the north, survey of a feasible line across the Canadian Arctic, and the recommending of specific sites for stations. The Canadian government was also approached about its interests and participation in the line.

The first work in the north was the aerial survey of two possible locations for the DEW Line. A high north line, along the 75th parallel, was discounted because of the difficulties associated with access for both construction and supply, the limited number of suitable site locations, and anticipated operational problems. The more southerly line, along the 70th parallel, was more accessible and a series of site surveys along it were completed by the spring of 953.

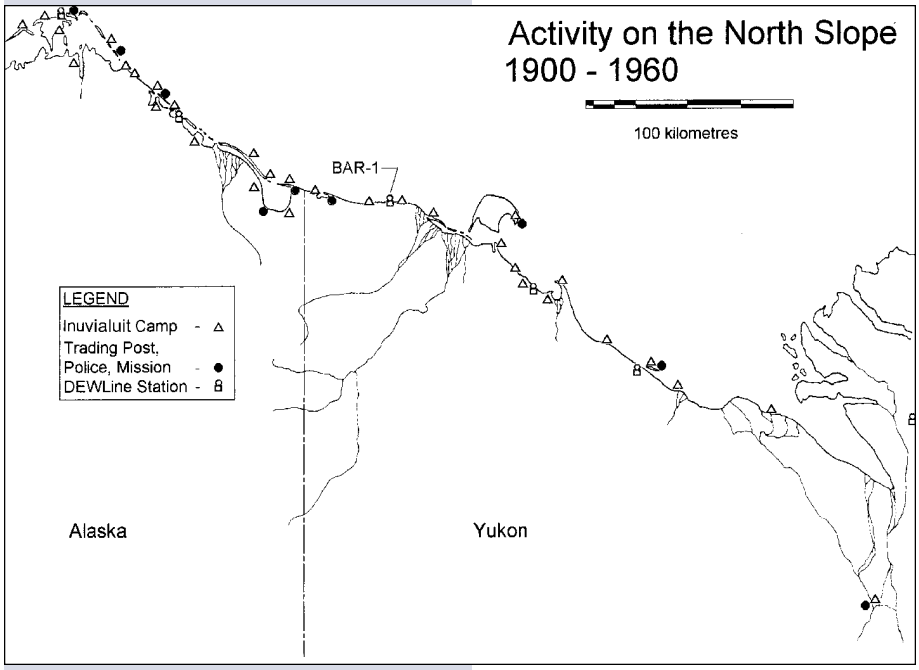
The selection criteria developed for DEW Line sites highlights those elements considered important to the system designers. They included:
1. Good access by water for initial construction and resupply operations. Further overland travel possibilities for lateral communications between stations was considered important.
2. the need for airstrips.
3. a good radar view to the north with no local conditions that might affect electronic communications.
4. ground capable of bearing a station or with sufficient local gravel resources to create such a base.
5. access to fresh water.
6. the use of the small but valuable reservoir of manpower... available in the native settlements .16

Inuvialuit carpenter on the job-site constructing a station. Photo: DND CPU.

While the preliminary line and site surveys were underway the Americans approached the Canadian government with their requirements for CORRODE. While the physical tests could easily have been completed in Alaska the importance of Canadian participation, or at least permission, was central to the whole DEW Line. To meet this diplomatic test the experiment included a station in Canada. Originally sites at Herschel Island and Aklavik were considered but these were supplanted by a more isolated site just east of the Alaska boundary.17 Canada acceded quickly to the test station on the condition that the United States bear the complete cost of its construction and operation.18

Western Electric meanwhile developed its two prototypes. After constructing them in an Illinois cornfield the buildings were dismantled and shipped to Barter Island, Alaska. From there the components for one station were loaded on cat trains and hauled to the Canadian site through the spring of 1953. Construction of both stations took place through the summer and both were in operation by early 1954.19

The DEW Line facilities were originally divided into three classes of radar stations. Main stations, staffed with 50 civilian workers and a small complement of USAF officers trained to evaluate the radar sightings, acted as supply and service centres with direct aircraft and communication links to the south. Auxiliary stations, with about 20 civilian staff, and Intermediate stations, known as I-sites and staffed by five civilians, were supplied by and

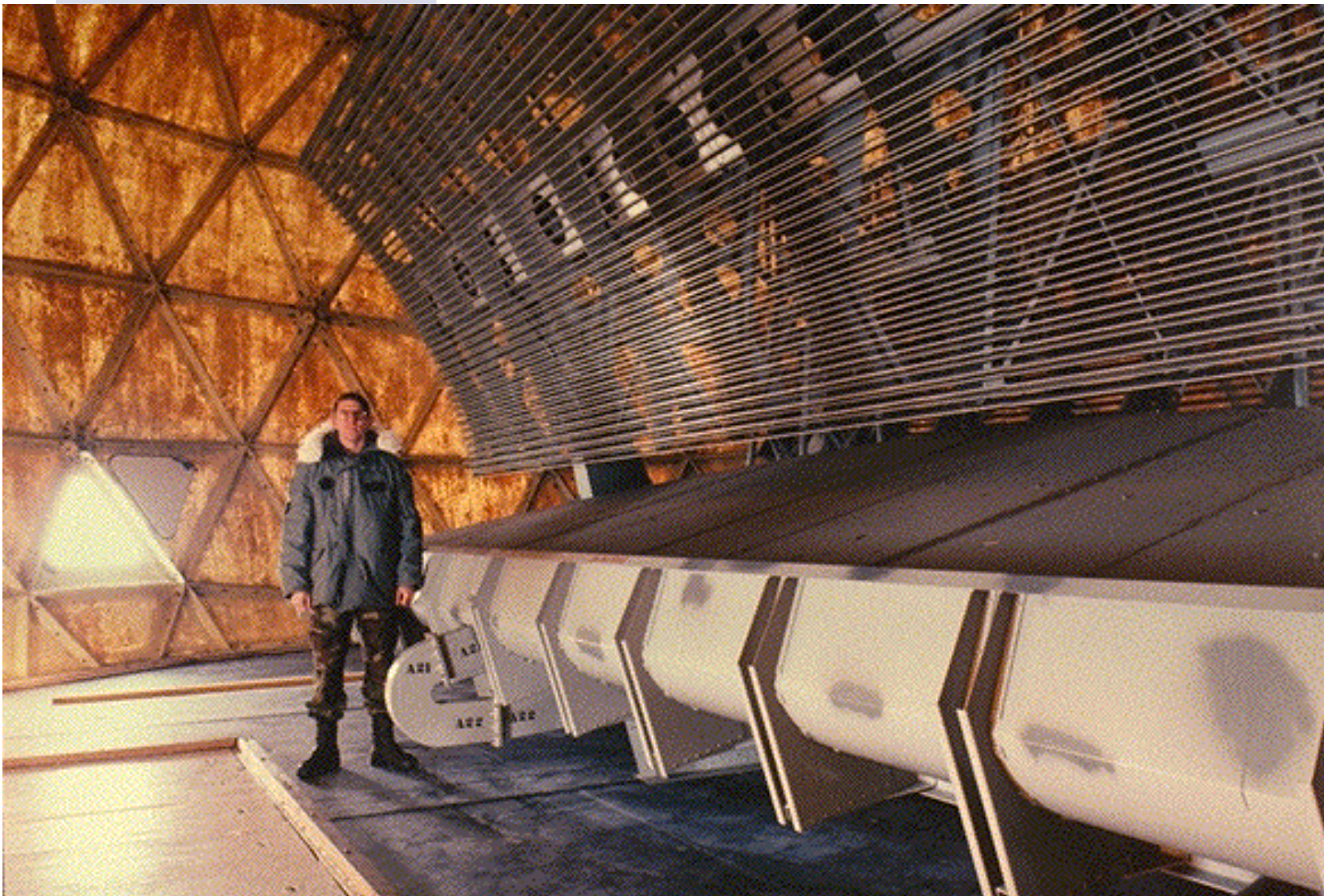


reported to their Main station.20 At roughly 80 kilometre intervals the stations provided overlapping long/high and short/low range radar coverage of the northern approaches to the continent.

This first pair of DEW Line stations straddled the Alaska-Yukon boundary. A Main station (BAR)21 was built at Barter Island. The first station in Canada, an Auxiliary station (BAR-1) went up at Komakuk Beach. Komakuk Beach and the subsequent three western-most stations in Canada, Stokes Point (BAR-B), Blow River (BAR-2), and Tununuk (BAR-C) made up the first integrated unit of the DEW Line.

The first winter of operations was carefully evaluated. In June, 1954 the USAF announced that the project had successfully met its objectives - the DEW Line was technically feasible. Budgets and construction specifications were prepared and negotiations with the Canadian government were concluded with a draft agreement on the DEW Line in September, 1954.23

Capt. Miller, USAF, before the radar array. Photo J.J.Johnson



BAR-1 from the south, 1990.
Photo: D. Neufeld

Design Considerations and Early Operations

The DEW Line was a major military fortification system costing several billions of dollars the DEW Line was carefully planned by the military and its operational purpose clearly defined. Nevertheless the complexity of this new military system demanded the production of a prototype to test the design, its operation, and its political acceptability. BAR-1 at Komakuk Beach is a component of this prototype DEW Line unit.

BAR-1 fulfilled an early warning task for continental defence purposes. Four interrelated functions were identified to meet this task.

1. Detection of air activity and communication of findings.
2. Station management and regulation.
3. Operational support to ensure functional continuity.
4. Staff support to maintain staff morale and abilities.

Continuing operation required stations be designed to operate for extended periods without resupply in the rigorous arctic climate and to ensure the survival of the staff in the event of a disaster. The building shell, environmental control systems, and a regular and complete maintenance program were expected to ensure the station's ability to function in the Arctic.

The DEW Line stations' essential military role required full-time, continuous station operations. The stations locations, remote from the sources of resupply and repair, therefore demanded an ability to maintain operations for extended periods. Like any well designed fortification the possibility of war action required the DEW Line to be an integrated mutually supporting, self-sufficient system. The design of the DEW Line and the individual stations therefore included elements of mutual support among adjacent elements and the provision of system self-sufficiency through the provision of extensive storage facilities, repair and maintenance capabilities, and multiple system redundancies. These elements of modern fortification are reflected on both the DEW Line systems level and the individual station level.

In the summer of 1955 G.W. Rowley, as the Canadian Government representative, was assigned to the U.S. Navy task force carrying out the sea supply of the western sector of the DEW Line. On August 25 and 26th, 1955, he visited BAR-1. His report27 on his stay there gives a vivid picture of the site during its early days of operation.

[After being put ashore by the United States icebreaker *Burton* Island

, Rowley walked up to the station buildings.] ...*Though the station was fully manned it was not until I had been in the buildings for some minutes trying to attract attention that my presence was noted... The surroundings of the station are in good condition, there are only a few tracks and an effort has obviously been made to control the number of cans and paper scattered around.28.... There were 14 men at the station.... There are 17 Eskimos at BAR 1 from two families - those of Neil Allen and Foster Allen. They usually trade at Herschel but they also go into Aklavik and when I was there they were all away visiting friends at Barter Island. Neil Allen has been employed occasionally - for about two weeks in the last five months by the station and for six weeks by Northern Construction Company as a guide for their tractor train operations. No other Eskimos have been employed... The station takes a good deal of interest in the local Eskimo families. For instance Annie Neil had a child in June and was very ill. The Western Electric Company could not make contact with the doctor at Aklavik so they got the USAF to send their medical N.C.O. from Barter Island. After his arrival it was possible to get in touch with the doctor at Aklavik and he was able to diagnose the difficulty as a case of twins, one of which had not yet been delivered. Annie Neil was flown to the Aklavik hospital where the second child was born but both the babies unfortunately died. One of the cooks last year had, as a hobby, run a school for the Eskimo children, giving them about 1 1/2 hours a day and this had been very successful... The men sometimes accompany the Eskimos on their caribou hunts, and one of them had shot a caribou with the Eskimos rifle. I also heard that a goose had been shot. Two polar bears had been shot and it was said that this was necessary for protection as they had invaded the camp. I saw eight firearms at the site....29*

Single train type of DEW Line Auxiliary station. BAR-2 in 1990.
Photo: D. Neufeld

Impacts of the DEW Line - South

The construction and subsequent operation of the DEW Line has had a number of impacts on Canada. The issue of Canadian sovereignty in the north was an early concern and one expressed throughout the whole Continental Air Defence process. The system altered southern Canadians perspective of the north by opening access to previously remote areas for development. Although the system was designed and built by the Americans there were a number of science and engineering spinoffs of importance to Canada. The most important impact however was the impact of the DEW Line on Inuit and Inuvialuit acculturation.

The presence of the United States military in Canada was a point of political controversy since the Second World War. As the Cold War progressed and specifically with the development of the continental air defence system the growing presence of American military facilities and personnel increasingly irked parts of the Canadian political scene. The free hand given to the USAF in the construction of the DEW Line in northern Canada heightened these complaints.32 However Canadian political decisions in the 1950s were based on a strictly limited budget for defence33 and a significant conventional military commitment to the NATO forces in Europe. Finally Canadian politicians were anxious to avoid any possibility of having to deal with conscription. These decisions left little room for manoeuver on continental defence issues. Implicitly Canadians therefore accepted the American doctrine of massive nuclear retaliation and participated in the erection of a continental air defence umbrella.34 Canadian politicians, by taking the initiative in constructing and operating the much less expensive Mid-Canada Line, relinquished control over the DEW Line projects in the arctic but avoided any responsibility for the costs of the project. While the DEW Line remained an American operated defence system, Canadian anguish over sovereignty was somewhat ameliorated in 1959. On February 1 RCAF officers took over the radar sightings assessment role from USAF colleagues.35 Canadian defence posture through the late 1940s and 1950s, constrained by other Canadian government priorities,

"The Old and the New", a popular motif for newspapers reporting on the DEW Line in the 1950s. Inuit ham it up for the airmen at Frobisher Bay.
Photo: DND CPU 103317

largely reflected American military requirements. This is highlighted by the history of the DEW Line in northern Canada.

The DEW Line experience provided a wealth of experience and knowledge on Arctic conditions. The bulk of this information was collected by the United States but Canadian opportunities for contracting services and equipment to the DEW Line ensured that some was diffused into Canadian hands. The difficulties and solutions of permafrost construction, the development of appropriate transportation facilities, and the addressing of the difficulties of the northern electronic environment were all by-products of the DEW Line.

Spinoffs from the construction and operation of the DEW Line made significant changes to a number of areas in the Canadian economy. The most significant economic opportunities for individual companies were the air supply contracts for the DEW Line. The large freight volumes supported a huge expansion in northern air transport capacity. Several companies, Pacific Western (later Canadian Airlines) and Maritime Central Airways (the root company for Eastern Provincial Airlines), moved from being small bush lines to large integrated national airline companies.36 This growth in northern traffic supported the design and development of specific northern aircraft. DeHavilland Canada initiated their highly successful line of Short Takeoff and Landing (STOL) aircraft, such as the Beaver, on the basis of these northern requirements.37 Another high-technology development was the growth in Canadian electronics contractors who successfully bid on the supply and servicing of DEW Line components.38 The construction and supply of DEW Line building modules provided work for Sigurdson Millwork Co. Ltd. in Vancouver, BC, Hill-Clarke-Francis, New Liskeard, Ont., and Tower Co. Ltd., Montreal.39

The DEW Line opened up the High Arctic to southern Canadians. The psychological barrier of the remote north was broken down by the success of the project. By 1957 the DEW Line provided over 40 new airfields and helicopter landing sites, associated navigation aids, and a major hydrographic survey of the Arctic coastline.40 These facilities were supplemented in 1966 when new technologies made the I-Sites redundant. The Department of National Defence walked away from the sites, turning them over to the Department of Indian and Northern Affairs as possible bases for future northern development. While the bulk of these stations remained abandoned and have become environmental hot spots a number of remain important as research stations. The DEW facilities and experience have also supported the exploration and development of natural resources in the north.

Impacts of the DEW Line - North

The most important impact of the DEW Line, and the spinoffs noted above, however, was the greatly increased southern contact with the northern aboriginal peoples. The construction and operation of the DEW Line significantly changed the life of aboriginal people living in the Canadian Arctic. Across the north the culture and contact experience of the different aboriginal groups varied considerably. However a detailed description of the Inuvialuit perception of Project 572, including BAR-1, provides insight into the general course of these changes. This is followed by a discussion of the federal government s attempts to manage the changes initiated by the DEW

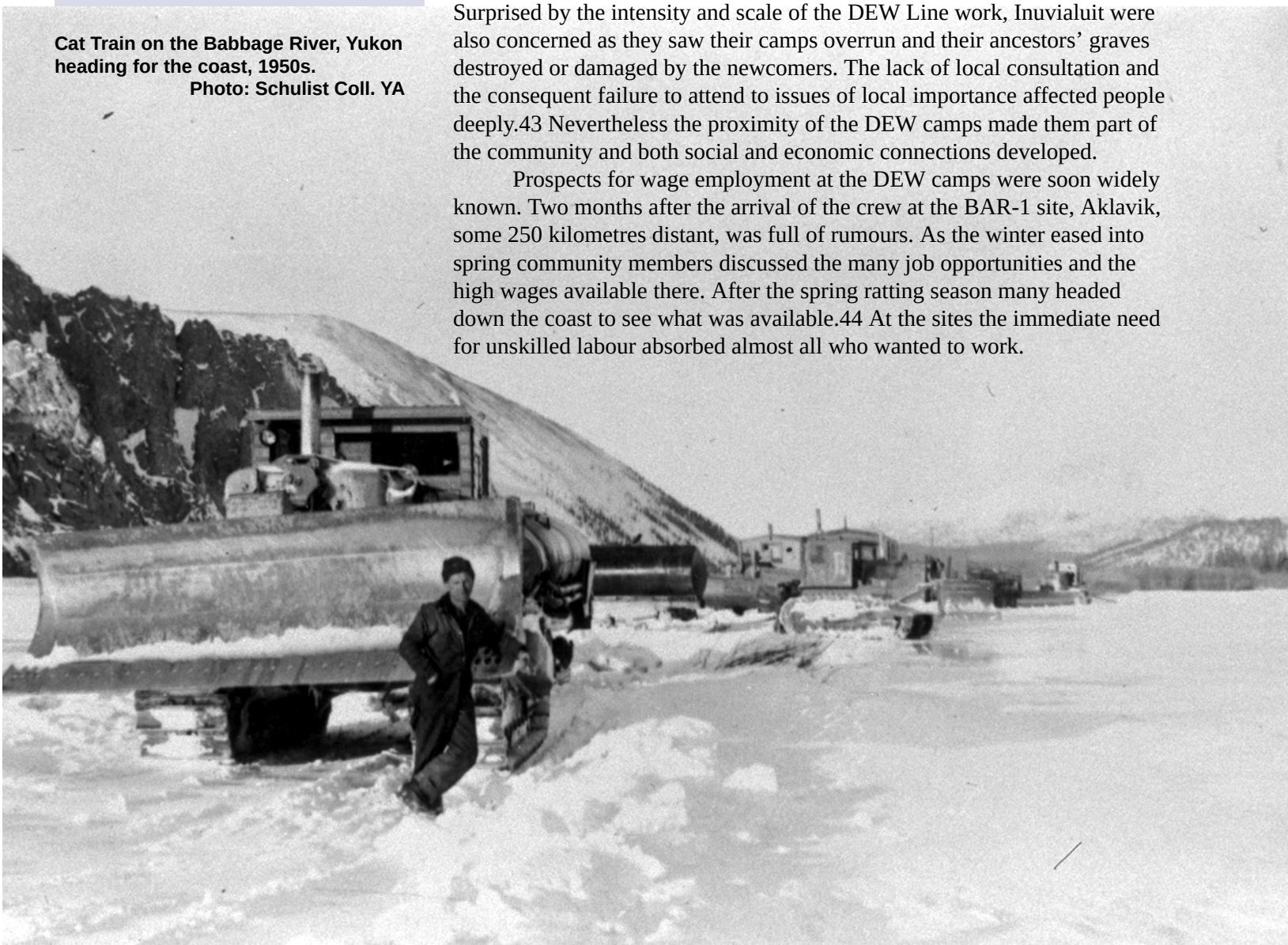
Line developments.

The Inuvialuit along the Alaska-Yukon north slope subjected to Project 572 activities were already familiar with Euro-American culture by the early 1950s. Whalers had arrived in the Beaufort Sea in the 1890s. In addition to trading for fresh meat during their over-wintering, the whalers also employed Inuvailuit whaling crews on a seasonal basis. By the 1920s commercial whaling had ended but the economic connection with the south was maintained through the fur trade. At the same time reindeer herding was introduced near Barter Island and, a decade later, to the eastern Mackenzie River delta. When fur prices collapsed in the late1940s some local Inuvailuit maintained their limited requirements for southern goods by mining the placer gold deposits of the Firth River. By 1950 Inuvailuit west of the Mackenzie had a well incorporated cash component in their annual round of harvesting and social activities.41

In the winter of 1952-53 the elements of Project 572 were shipped to Barter Island. Cat trains, hauling construction equipment and supplies and a mobile camp with 50 workers, headed east to the BAR-1 site. Work began immediately. Large quantities of gravel were hauled from Pattaktuq to the site. A roadway, still visible today, was cut into the tundra. By spring the large buildings of the station were up and being fitted with equipment.42

The suddenness of their appearance, the rapid pace of the work, and the large scale of the camp and its products astonished local people. Surprised by the intensity and scale of the DEW Line work, Inuvialuit were also concerned as they saw their camps overrun and their ancestors' graves destroyed or damaged by the newcomers. The lack of local consultation and the consequent failure to attend to issues of local importance affected people deeply.43 Nevertheless the proximity of the DEW camps made them part of the community and both social and economic connections developed.

Prospects for wage employment at the DEW camps were soon widely known. Two months after the arrival of the crew at the BAR-1 site, Aklavik, some 250 kilometres distant, was full of rumours. As the winter eased into spring community members discussed the many job opportunities and the high wages available there. After the spring ratting season many headed down the coast to see what was available.44 At the sites the immediate need for unskilled labour absorbed almost all who wanted to work.



Cat Train on the Babbage River, Yukon heading for the coast, 1950s.
Photo: Schulist Coll. YA

F/LBarnett of Thornbury, Ontario worked at the Data Centre at PIN Main (Cape Perry) in the late 1950s. Here he squats outside one of the tarpaper shacks of the local Inuit.
Photo: DND CPU 3525

While only a limited number of Inuvialuit actually gained jobs their extended family networks joined them at the work sites. New Inuvialuit camps made of discarded boxes and crates contrasted sharply with the non-native workers snugly housed in heated, specially insulated buildings. At BAR-B (Stokes Point) some of this box and crate housing type was still in use as a hunting camp in the early 1990s. Thus a large part of the Inuvialuit population had direct contact with the DEW camps.45

Parallel with the formal working relationships were a range of informal contacts between Inuvialuit and construction crew. At BAR-1 camp workers traded personal and company goods with a pair of enterprising Inuvialuit boys for fresh trout. At one 572 site the cook had a Christmas tree, ornaments, and presents sent up for the Inuvialuit who were invited in for a turkey dinner with all the fixings. Crew workers also visited Inuvialuit at their nearby camp and occasionally joined them in caribou hunts.46 The DEW camps quite quickly became part of the north slope community.

Both the formal and informal connections between Project 572 camps and the Inuvialuit developed in a manner largely unregulated by either local agreements or government supervision. These connections included a number of changes. Herschel Island, long an Inuvialuit camp, was effectively deserted during the mid-1950s. In response to this changing pattern of Inuvialuit use the RCMP seriously considered the transfer of their Herschel Island post to the DEW camp at BAR-B (Stokes Point).47 More important from the Canadian government's point of view, was the extension of modern social and health services to the Inuvialuit.

The Project 572 camps included extensive medical facilities to treat sick or injured crew. These services also applied to Inuvialuit employees and were also frequently extended to family or community members living nearby. The lack of any alternative medical services left camp managers with little choice when faced with requests for help. Some DEW staff also offered classes in basic literacy to their Inuit co-workers. These services and training opportunities were significant, and expensive, additions to those limited services previously supplied by the federal government in the north.

By building in the Arctic, Project 572 not only tested building and organizational characteristics for continental defence. The project initiated a host of chages in Inuvialuit lifestyle and activities. Old camps and traditional land use pattern were disrupted, directly by construction activities and indirectly by providing skills training and regular year round work. In the early period of DEW construction Inuvialuit were generally hired on a casual basis as unskilled labourers on the site or for their knowledge of the area. Jimmy Jacobson hired on as a dog team driver assisting a survey crew along the Yukon coast.48 Later other jobs were also made available.

The combination of DEW Line jobs with a revival in fur prices in the early 1950s signific ntly accelerated the adoption of southern material goods. The HBC store in Tuktuk normally cleared about $55,000 of business annually. In 1955 the manager expected $150,000; in the first three weeks of August alone the store had $24,000 in sales. At the same time mail-order business increased from practically nothing in the late 1940s to over $10,000. Most of the purchases were for boats, outboard motors, and related capital goods.49 The range and scale of changes were absorbed by the local communities with some difficulty. However, the Canadian government noted them with concern.

Up to the 1950s, the Canadian government had largely ignored its role

as legal guardians of the Inuit and Inuvialuit. Apart from a few high profile projects such as the large reindeer herding experiment in the 1930s, the isolation of and limited knowledge about Arctic aboriginal peoples and the great expense of accomplishing anything had limited the government interest in their welfare. The pressures for change in this attitude, created in part by DEW Line activities, however led to an attempt to manage the impacts of the DEW Line upon the Inuit and Inuvialuit.

The Canadian government had at least a half century of involvement with the Inuvialuit west of the Mackenzie. In response to urgent requests from missionaries at Herschel Island, a North West Mounted Police post was established there in 1906. The missionaries felt that official management of the interaction between whalers and natives would limit the unwholesome affect of the sailors on the local aboriginal people. Fur trade regulations in the Beaufort Sea area were also introduced in the mid-1920s at the request of the Hudsons Bay Company. Beleaguered by itinerant traders the HBC moved to protect its effective stranglehold over trade in the far northwest. And the government initiated the massive migration of commercial reindeer from Alaska to the Mackenzie delta in the 1930s in an attempt to settle the Inuvialuit population and provide them with regular wage employment. While intermittent the government s efforts were focussed on minimizing outside influences on the Inuvialuit. The RCMP Commissioner urged that, “Where Eskimos are getting along in good shape in the old fashion and supporting themselves by hunting and trapping, they should be left alone and not permitted, or at least not encouraged, to abandon their old life and cluster around DEW line installations.”50 Project 572 and subsequent DEW Line connections however, challenged these attempts to minimize contact with non-natives.

The management of aboriginal relations with newcomers was a major component of the treaty governing the construction of the DEW Line.51 The treaty noted the, “Eskimos... are in a primitive state of social development. It is important that these people be not subjected unduly to disruption of their hunting economy, exposure to diseases against which their immunity is often low, or other effects of the presence of white men which might be injurious

Northern Service officer, D. Wilkonson at Frobisher Bay poses with some of the Inuit children of the community.
Photo: DND CPU 103308

A mother and her five children get a dinner at the Caoe Dye DEW station construction camp.
Photo: DND CPU 114 424

to them." Six comprehensive conditions to govern the character of the contact with the "Eskimo" were established. Under these conditions the Canadian government accepted responsibility for the management of all aspects of relations between Arctic aboriginal people and the DEW Line.

To fulfill these new obligations the Department of Northern Affairs and Natural Resources created Northern Service Officers (NSO). The NSO were to facilitate communications between northern construction crews, government agencies, and native people. Basically they were to protect the interests of the Inuit and Inuvialuit and prevent any local difficulties from slowing the pace of defence construction. By frequent visits to DEW sites the NSO were to stay informed of local concerns as expressed by DEW operators. The first six officers were appointed in January and February, 1955.

Hired to represent the best interests of the Inuit and Inuvialuit and to encourage their participation in local government, the NSO were instructed to maintain tight control over the relations between aboriginal peoples and non-natives.52 Visits to encampments by non-residents were strictly limited to avoid inconveniencing them at home. While practicable at the more remote DEW stations these restrictions were unmanagable at the larger stations in the central and eastern Arctic. Nevertheless the NSO attempted to minimize disruptions of Inuit and Inuvialuit life.

The primary responsibility of the NSO was to secure the old way of life for those able and interested in pursuing it and providing alternative work to those incapable. To this end the NSO was to be aware of threats to game, especially due to construction or DEW operations, and make Inuit and Inuvialuit aware of the need to protect game species. Hunting was prohibited for DEW Line employees. For those unable to survive in the old ways the NSO managed the job opportunities available from the DEW Line. And there were many jobs. By 1962 over half of the Inupiat men at Kaktovik had jobs at BAR MAIN immediately beside their community.53 In Canada over a hundred Inuvialuit and Inuit were employed on the DEW Line by the end of 1957.54

For the native workers the NSO strove to provide work to meet the perceived needs of the individual. The government's ideal was to ensure Inuvialuit and Inuit gained only permanent full-time jobs at the stations. They did not want the local aboriginal population to become a floating

labour pool for northern contractors. The implications of this policy however, were far reaching. Single young men were the prime candidates for these jobs, a married man was only allowed work if he could make alternative arrangements for the care of his family. Once selected individuals were often required to move to distant stations and live on-site. Here they gained job training in an environment that would be difficult to escape on an impulse. Their wages were deposited directly into trust funds managed by the NSO. Upon completion of the job the account was deposited into a bank account accessible by mail by the individual. More usual was for transfer of the account to the appropriate local trading post. This proved unsatisfactory as the NSO often attached a semi-compulsory saving component on Inuvialuit and Inuit accounts, leading to pressure on trading post managers by men who wanted to spend his money. 55

Medical services at DEW Line stations also became a problem. After recognizing the interaction between local aboriginal people and DEW Line stations the government attempted to develop an agreement with the operators of the line to act as medical services for local Inuit. While this piggybacking of services on an opportunistic basis offered an immediate medical service a host of complications followed. Medical staff at Auxiliary and Intermediate DEW Line stations were merely technical staff with some First Aid training. Many were overwhelmed by the nature of the treatments, injuries or diseases they were called upon to deliver and were often unable to give effective treatment to women and children. Finally in 1962, the fear of malpractice suits, the complex method of determining who should give permission and pay for what service, and the threat to the effective operation of DEW stations forced Federal Electric, the line contractor, to end medical services to all but its own employees.56

"Eskimo House" at BAR-1. Photo: Whitehorse Star, YA

The direct impact of DEW Line construction and operation on Arctic aboriginal peoples faded as the line reduced operations in the early 1960s. The closure of the 20 I-Sites in Canada ended many jobs. Ongoing work for local people at the remaining stations became less important but only because of the accelerated pace of other economic developments in the Arctic. Mining and oil exploration, both on land and in the sea, have offered many new challenges and some opportunities to the Inuit. Through the course of the 1950s and early 1960s the DEW Line stations had acted as both catalysts for and providers of southern Canadian services to Inuit. The opportunities for wage employment, technical training, and access to modern medical and educational services all dramatically changed the way Canadian Inuvialuit and Inuit lived.

Conclusion

The DEW Line has disappeared. Changing technology and the waning of international tensions reduced its importance and the last station was closed in 1993. Satellite warning systems and the North Warning System with its automated unstaffed stations have replaced the DEW Line, the historic fortress of the mid-twentieth century. Nevertheless the history of the DEW Line offers present policy makers and legislators an imposing array of experience from which to draw as they consider and respond to the equally dramatic social and cultural changes rising from climate change. The opportunity to study this experience and frame its lessons in light of present concerns will provide the background needed to make intelligent assessments of present conditions and to create informed and effective policies and legislation to shape the future.

Kids and toy car at BAR-1 station, August, 1972.
Photo: NAC PA 145816

Endnotes

1 This discussion is based upon DND Directorate of History 79/649 Vol. 3, For Possible Inclusion in classified history of RCAF Air Defence Command, Feb. 28/58. Continental defence agreements include the Ogdensburg Agreement (August 18, 1940) Joint Statement on Defence Co-operation (February 12, 1947), NATO North American Regional Defence Committee (1949), and the series of radar station agreements through the early 1950s noted below.

2 This summary of the development of North American military doctrine in the post-war period is based upon J. Eayrs, In Defence of Canada - Peacemaking and Deterrence (Toronto, 1972), J. Eayrs, In Defence of Canada - Growing up Allied (Toronto, 1980), K.C. Eyre, Custos Borealis - The Military in the Canadian North (PhD., Univ. of London-King s College, 1981), C.A. & M.A. Beard, The Beard s New Basic History of the United States (Garden City, 1968), J.T. Jockel, The United States and Canadian Efforts at Continental Air Defence 1945-1957 (PhD., John Hopkins Univ., 1978), and R. Bilstein, Flight in America 1900-1983 (Baltimore, 1984).

3 J. Eayrs, Peacemaking and Deterrence, p. 358.

4 A.K. Wickson, Guided Missiles , The Engineering Journal, De/49, p. 816. Wickson was an armaments researcher with the Canadian Defence Research Board.

5 J. Eayrs, Peacemaking and Deterrence, p. 363.

7 Information on SUPREMACY and the subsequent Modified Plan comes from J. Eayrs, Peacemaking and Deterrence, p. 356, K.C. Eayrs, Custos Borealis , p. 131, C.L. Grant, Development of Continental Air Defence, p. 81-83, and J.T. Jockel, The US and Canadian Efforts, p. 33-34.

8 J. Eyre, Peacemaking and Deterrence, p. 135-136 discusses the changing western assumptions of Soviet attack strategies that shaped continental defence programs.

9 Information on the Pine Tree Line from J. Eayrs, Peacemaking and Deterrence, p. 358 and C.L. Grant, Development of Continental Air Defence, pp. 61 & 108.

10 J.T. Jockel, The US and Cdn Efforts, p. 174.

11 C.L. Grant, The Development of Continental Air Defense, pp. 62-64.

12 J. Eayrs, Growing Up Allied p. 192 shows the five fold increase in defence expenditures between 1949-50 and 1952-53.

13 By 1951 the Canadian government committed both ground troops and supporting aircraft to a long term NATO standing force in Europe. J. Eayrs, Growing Up Allied p. 209-211 & 220.

14 The following material on the Mid Canada Line is from J. Eayrs, Peacemaking and Deterrence, p. 368-370 and J.T. Jockel, The US and Cdn Efforts, p. 214.

15 Originally designated COUNTER-CHANGE by the USAF, the contract was identified as CORRODE. Western Electric staff referred to the work as Project 572.

16 The line survey and site selection material comes from Western Electric, DEW Line Survey Report, Oct. 16, 1953, pp. 2-3. Interestingly subsequent writers on the DEW Line outlining these criteria have overlooked or ignored the reference to the local native labour force. cf. J.R.K. Main, Voyageurs of the Air (Ottawa, 1967) p. 227. Also not too surprising is the fact that these locations were also generally on or close to traditional habitation areas. Western Arctic Inuvialuit have described how the DEW Line stations destroyed or built over old camps and graveyards. Personal communication, Nov. 29, 1991 with Murielle Nagy.

17 NAC RG 18 [85-86/048] f. G-825-11 (1958) Box 35. The reason for this change is not clear, though later evidence, discussed below, suggests a desire by the Canadian government to limit contact between southerners and northern aboriginal peoples.

18 C.L. Grant, The Development of Continental Air Defense , p. 64 and J. Eayrs, Peacemaking and Deterrence, p. 362.

19 Continental Defense , WE Magazine, Jy-Au/55 and Western Electric, DEW Line Site Survey Report, p. 5.

20 IT&T, Manning the DEW Line , c. 1960, pamphlet.

21 Note that all stations were codenamed after the host communities. Main stations gained a three letter code, ie. Barter Island became BAR, Cambridge Bay, CAM. Auxiliary stations gained a number suffix, BAR-1, PIN-2, while Intermediate stations a letter suffix, CAM-A, BAR-C. Details on the stations from DND, Directorate of History, 934.009 (D327) and NAC, RG 18 [85-86/048] f. G-825-8-11, Box 35.

23 J.T. Jockel, The US and Canadian Efforts , p. 175 and J. Eayrs, Peacemaking and Deterrence, p. 371.

27 G.W. Rowley's report of November 25, 1955 is in NAC, RG 18 [85-86/048] G-825-8-11, pt. 2, Box 35, pp. 354-356.

29 The RCMP had suggested to the Line planners that only one rifle be allowed at each station for dealing with bears. This rifle was to remain under the direct control of the station manager. There was a real fear that DEW Line personal would threaten local wildlife populations.

32 Ralph Allen, Will Dewline cost Canada its northland? , Maclean s Magazine, 26 My, 1955. One DEW Line informant told me a story of a USAF source who upon being questioned why Canadians needed American

permission to visit a station on Canadian soil was told, “Your Prime Minister couldn’t get in here without our permission.” Site visit, February, 1993.

33 The US spent almost twice as much proportionally as Canada on defence in the early 1950s. J.T. Jockel, “The US and Canadian Efforts” , p. 251.

34 J.T. Jockel, The US and Canadian Efforts”, p. 209-211.

35 K.C. Eyre, “Custos Borealis” , p. 139-140.

36 J.R.K. Main, Voyageurs, p. 228.

37 J.R.K. Main, Voyageurs, p. 230.

38 K.C. Eyre, “Custos Borealis”, p. 145.

39 “A Review of DEW Line”, The Engineering Journal, Nov., 1957, p. 1666.

40 K.C. Eyre, Custos Borealis , p. 142-143, J. Eayrs, Peacemaking and Deterrence, p. 294, and J.R.K. Main, Voyageurs, p. 230.

41 Canadian Parks Service, Northern Yukon National Park Resource Description and Analysis, Chapter 10 Cultural Resources of Northern Yukon National Park by D. Neufeld and G. Adams (PNRO, 1990) provides additionaldetail on this incorporation of cash into the Inuit annual round.

42 572 , WE Magazine, No-De/53 and A Review of the DEW Line , The Engineering Journal, Nov., 1957, p. 1670.

43 Reminiscences of Jimmy Jacobson via personal communication, Nov. 29, 1991 with Murielle Nagy.

44 NAC, RG 18 [85-86/048] f. G-825-11 (1958) Box 35, 1 My/53.

45 Quotes from 572 , WE Magazine, No-De/53, contact note from NAC RG 18 [85-86/048] f. G-825-8-11 pt.3 Box 35, p. 590.

46 Arctic Log and Next Door to S. Claus , WE Magazine, No-De/55 and No-De/54 and NAC RG 18 [85-86/048] f. G-825-8-11, pt.2 Box 35, pp.354-355.

47 NAC, RG 18 [83-84/068] f. G-567-1 Box 19 Ap 16/55, p. 29.

48 Arctic Log , WE Magazine, No-De/55.

49 NAC RG 18 [85-86/048] f. G-825-8-11 Box 35, pt. 2 p. 25.

50 NAC, RG 18 [85-86/048] f. G-825-8-11, pt.1 Box 35, 22 Feb., 1955, p. 98.

51 Canada, Treaty Series 1955 No. 8 DEFENCE - Establishment of a distant early warning system, 5 May, 1955, Annex 13 of the Statement of Conditions Matters Affecting Canadian Eskimos.

52 Information on the NSO and DEW community relations from M. Zaslow, The Northward Expansion of Canada 1914-1967 (Toronto, 1988) pp. 326-330 and R.Q. Duffy, The Road to Nunavut (Montreal, 1988) p. 200. Details of the NSO responsibilities from NAC RG 18 [85-86/048] f. G-825-8-11 pt.1 Box 35 Instructions for Northern Service Officers representing the Department on construction of the DEW Line , pp. 100-104 and 136-139.

53 Norman Chance, The Eskimo of North Alaska (New York, 1966) p.17.

54 NAC RG 18 [85-86/048] f. G-825-8-11 pt.3 Box 35 p. 590.

55 NAC RG 18 [85-86/048] f.G-825-8-11 pt.2 Box 35, p. 360.

56 NAC RG 18 [85-86/048] f. G-825-8-11 pt.2 Box 35 includes minutes of the negotiations for DEW Line medical services. Duffy, Nunavut pp. 61-62 describes the overall situation.