

DID YOU KNOW?

DISTANT EARLY WARNING (DEW) LINE

Built as a pre-emptive measure against the threat of Russian aerial bombing attacks during the Cold War, the Distant Early Warning (DEW) Line stood watch over the Arctic Circle for nearly 40 years. The unforgiving Arctic weather served as backdrop as construction crews braved the elements to construct a defensive line of surveillance radar stations across the northernmost tip of North America that would warn of any incoming security threats. But did you know that Aecon – through one of its predecessor companies – confronted the largely unexplored Arctic territory to collaboratively complete a project deemed as one of the most demanding construction jobs ever undertaken in the North?



FACTS AT A GLANCE

CLIENTS:

Bilateral agreement with both the Canadian and U.S. governments

PRIME CONSTRUCTION CONTRACTOR:

Western Electric Company Inc.

AECON'S INVOLVEMENT:

The Foundation Company of Canada, an Aecon predecessor company

COST:

\$27,944,984 (\$249,522,942 in today's dollars)

TYPE OF CONTRACT:

Fixed Fee

LOCATION:

Arctic Region of Canada

SCOPE:

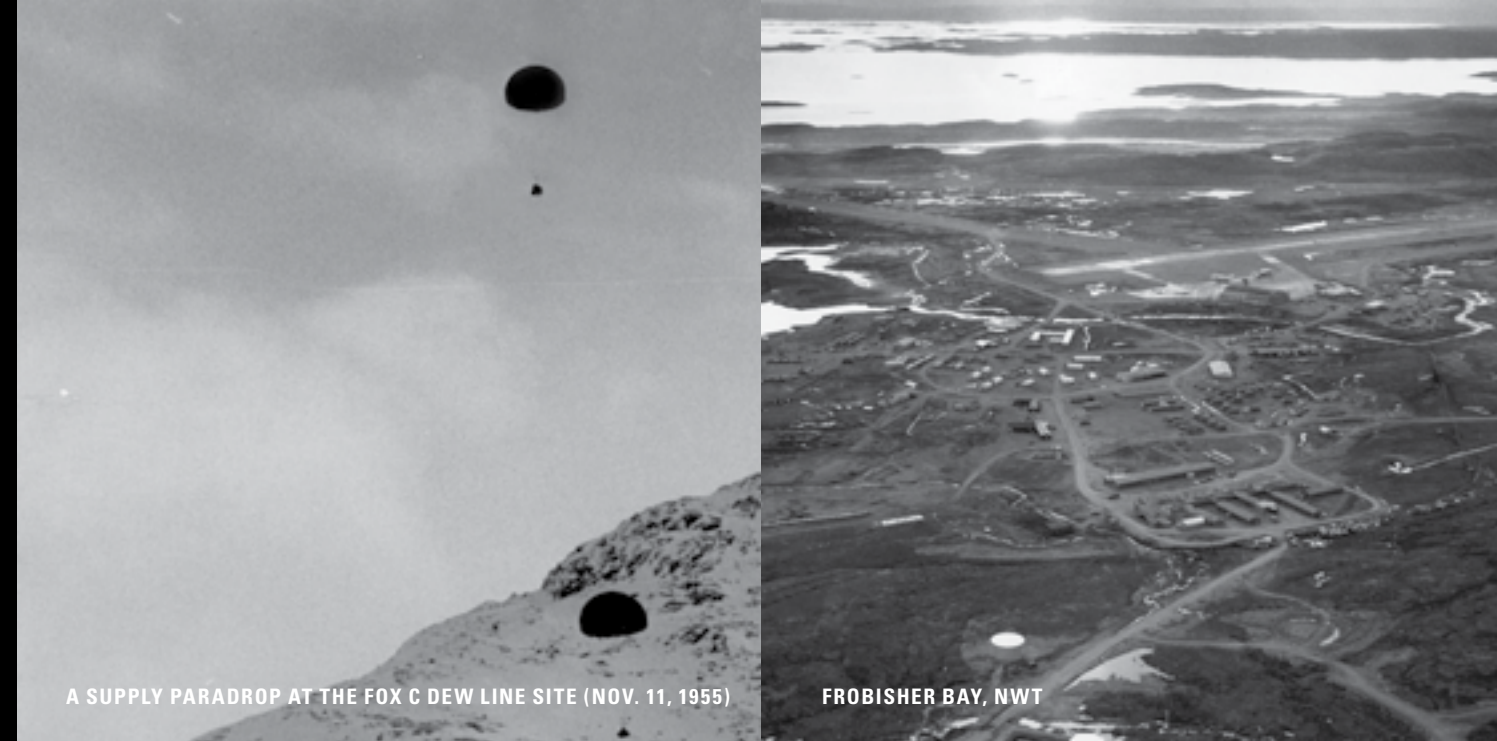
Construction of 17 surveillance radar stations and a radio relay station

CONSTRUCTION TIME FRAME:

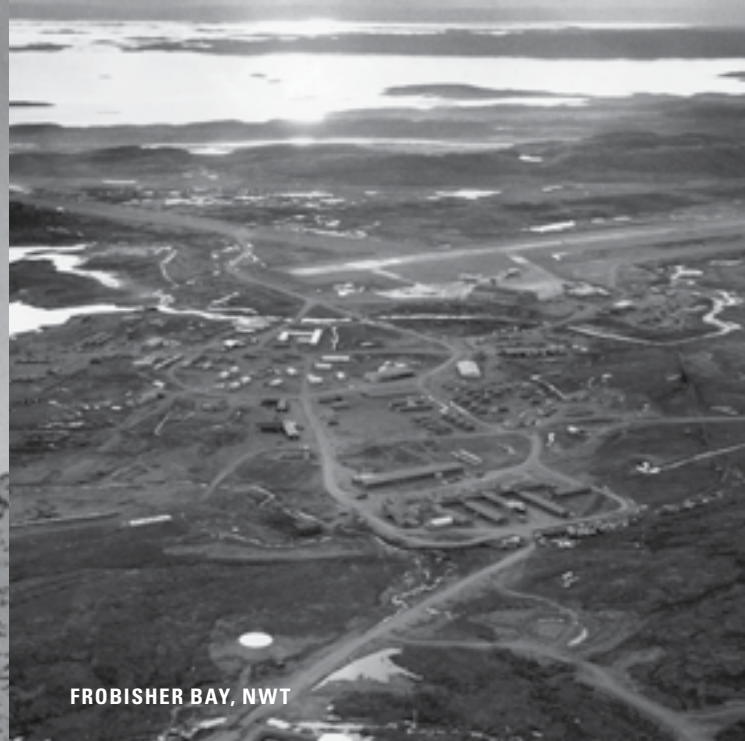
January 1955–March 1957

DEACTIVATION:

1995



A SUPPLY PARADROP AT THE FOX C DEW LINE SITE (NOV. 11, 1955)



FROBISHER BAY, NWT



OFF-LOADING MATERIALS FROM A LANDING SHIP ALONG THE EAST COAST OF BAFFIN ISLAND



THE RUGGED TERRAIN OF NORTHEASTERN CANADA SPEAKS TO THE CHALLENGES INHERENT IN CONSTRUCTING THE DEW LINE.

The Distant Early Warning (DEW) Line was an integrated chain of 63 surveillance radar and communication stations strategically placed across roughly 5,000 kilometres of desolate, snow-covered terrain. From the northwest coast of Alaska to the eastern shore of Baffin Island, Nunavut, the stations collectively scanned the north for possible airborne surprise attacks on North American soil.

While the sheer magnitude and expense of the project led the U.S. government to shoulder the bulk of its accountability, the Canadian government, in the end, remained strategic in its role. Documentation reflects Canada's initial hesitation and inability to financially contribute to the project. This stance was, however, quickly overridden by the prospect of a unilateral American construction project in the Canadian North. Far worse than the proposed economic burden of such a massive project was the threat of the U.S. exercising military control over

the region due to a lack of Canadian presence. And so the Canadian government entered into a bilateral agreement with the United States in the early 1950s, with construction getting under way in December 1954.

The federal governments of the partnering countries selected Western Electric Company Inc. as the main contractor for the project. Shortly thereafter in late December, Western Electric contracted The Foundation Company of Canada to build 17 of the 63 stations that would run along the eastern Canadian portion of the DEW Line.

An undertaking of this magnitude necessitated planning on a scale comparable to a major military operation. Thousands of skilled personnel were transported to the Arctic region, housed, fed and supplied with the equipment and materials required to see the project through. Everything from sacks of potatoes down to the smallest nut and bolt had to be delivered to this remote northern location.

A veritable caravan of military and commercial vehicles distributed thousands of pounds of cargo along the entire length of the DEW Line to build permanent settlements for the personnel at each of the 63 sites. Incredibly, approximately 420,000 tonnes of materials were transported to the Arctic from the U.S. and Canada by air, land and water, including enough gravel to build two versions of the Great Pyramid of Giza.

Locating the radar sites was documented as being a formidable undertaking since much of the geography was considered extreme. The Royal Canadian Air Force (RCAF) contributed an invaluable resource by providing 80,000 aerial photographs. In most sectors, these photos were supplemented by on-the-spot surveys, and many sites weren't even surveyed until the arrival of advance construction parties.

In the summer of 1955, a sealift was organized on both the west and east coasts. From Halifax, Nova Scotia, a vast armada of ships slowly made their way

EVERYTHING FROM SACKS OF POTATOES DOWN TO THE SMALLEST NUT AND BOLT HAD TO BE DELIVERED TO THIS REMOTE NORTHERN LOCATION.

northward, preceded by the icebreakers HMCS *Labrador* and USS *Edisto*. The armada manoeuvred its way through the puzzle-like ice fields day and night, partially guided by the midnight sun – a natural phenomenon occurring during the Arctic's summer months.

And while the stark natural beauty of the Arctic was ever present, the journey was fraught with challenges. Since movement in the Arctic is heavily restricted by weather, the armada often encountered dense fog and rough sea conditions created by warmer airflow patterns. Suffice it to say, when the weather failed to cooperate, the team shifted to airlifting wherever possible to reduce risk and

increase efficiency and safety.

As with most construction projects, with every new turn came a new set of challenges, and airlifting was no exception. Piloting skills were put to the test as the crews attempted to safely set down on established landing strips. Each landing strip was built by a small construction crew using supplies that were airdropped to the isolated locations. Unfortunately, even this tried-and-true wartime tactic wasn't without its flaws. Sometimes, due to freezing, parachutes would simply fail to open. On two such occasions, bulldozers made an unrehearsed free drop from 250 metres, plunging

through a metre-and-a-half thickness of ice into the sea.

Despite Mother Nature's unwillingness to cooperate, crews soldiered on. With stacks of supplies, materials and equipment mounting, construction began to move forward at a rapid pace. At the heart of it all was the supply chain that powered the entire project, located at an air base in the Northwest Territories. The Frobisher Bay Air Base became a focal staging point with on-site storehouses brimming with inventory. The base hosted large numbers of transport aircraft and naval ships on a daily basis as they swooped in to deliver all vital components for this unparalleled project.

81,000 TONNES OF MATERIAL AND EQUIPMENT SHIPPED TO THE ARCTIC BY AIR

96,000 TONNES SHIPPED BY SEA

11,400 TONNES OF FOOD REQUIRED TO PROVIDE 8,000,000 MEALS

64 MILLION LITRES OF DIESEL AND AVIATION GASOLINE CONSUMED

ON AVERAGE, ONE TONNE OF MAIL PER DAY PASSED THROUGH THE FOUNDATION COMPANY OF CANADA'S MONTREAL OFFICE, WHICH ACTED AS A SUB-POST OFFICE FOR BOTH OFFICIAL AND PERSONAL DEW LINE MAIL. THAT'S COMPARABLE TO AN ENORMOUS MOUND OF MORE THAN 65,000 STANDARD POSTAGE LETTERS.

In an open letter addressed to The Foundation Company penned before his return home in 1957, a contractor by the name of Georges J. DesRosiers credits Foundation for making possible the "near impossible" task of managing the copious amounts of required inventory.

"Some of us came here with past storekeeping experience, [the] majority [of us] with none," he notes in his typed letter. "But for my part, I can say that even with my past experience I have learned more from Foundation's storekeeping procedures than I have from other construction companies. In this country, Foundation has applied a system that could easily work, even with the hard climate, even with all the delay caused by bad weather or inexperienced personnel. To conclude, may I state that I appreciate the words spoken by Mr. Shaw, the Vice President of The Foundation Company of Canada, 'It can be done.'"

For two long years, inventory frantically moved through the project's respective storehouses; contractors battled darkness, blizzards and sub-zero temperatures; concrete was poured in the middle of frigid winters; buildings were constructed; electricity, heat and water were supplied to the sites; and massive steel antenna towers were erected. A full gamut of radar and communications equipment was installed shortly thereafter, followed by comprehensive, time-consuming facility testing. Finally, after more than two-and-a-half years, the everyday hustle and bustle subsided

on July 31, 1957, when the DEW Line became fully operable.

As time marched on, portions of the DEW Line were upgraded and, in 1985, replaced by a transitional project called the North Warning System (NWS). In essence, the NWS project upgraded strategic DEW Line stations to keep up with new and emerging threats. With the end of the Cold War and dissolution of the Soviet Union in 1991, however, the DEW Line was deemed obsolete. American flags were lowered along the Canadian portion of the DEW Line, and the U.S. withdrew its personnel, relinquishing to Canada full operational control of the occupied stations.

The cultural impact left behind by the DEW Line is undeniable in its significance to Canadian heritage. Through its advanced technology of the day, the DEW Line figuratively opened the doors on our country's Inuit communities, raising awareness and strengthening connections for the first time, as Canadians learned more about life in the Far North.

The construction and operation of the DEW Line also spurred economic development in the Canadian Arctic and provided momentum for further growth in the areas of research and telecommunications.

Aecon is proud of its connection to The Foundation Company of Canada and to this monumental project that played such a vital role in the history of our country.

A ROYAL CANADIAN NAVY (RCN) FROGMAN PREPARING DEPTH CHARGES TO CLEAR ICE IN THE WAY OF SUPPLY TRANSPORTS